

Service Manual

Computer Drive New Class A
Stereo Integrated Amplifier

Amplifier

SU-V10X

Color

(K).....Black Type



| Color | Areas |
|-------|---|
| (K) | [D]Scandinavia |
| (K) | [EF].....France |
| (K) | [Ei].....Italy |
| (K) | [EW].....Switzerland |
| (K) | [EK].....United Kingdom |
| (K) | [EH].....Holland |
| (K) | [EGA].....F. R. Germany |
| (K) | [EB].....Belgium |
| (K) | [XA].....Southeast, Asia, Oceania, Africa, Middle Near East and Central South America |
| (K) | [XL].....Australia |

SPECIFICATIONS

(DIN 45 500)

■ MAIN AMPLIFIER SECTION

(Input Signal: EXT. INPUT)

| | |
|--|--|
| 1 kHz continuous power output both channels driven | 2 × 120W (4Ω) 2 × 120W (8Ω) |
| 40 Hz~16 kHz continuous power output both channels driven | 2 × 120W (4Ω) 2 × 120W (8Ω) |
| 20 Hz~20 kHz continuous power output both channels driven | 2 × 120W (4Ω) 2 × 120W (8Ω) |
| Total harmonic distortion | |
| rated power at 20 Hz~20 kHz | 0.007% (4Ω) 0.003% (8Ω) |
| rated power at 40 Hz~16 kHz | 0.007% (4Ω) 0.003% (8Ω) |
| rated power at 1 kHz | 0.0015% (4Ω) 0.001% (8Ω) |
| half power at 20 Hz~20 kHz | 0.002% (8Ω) |
| half power at 1 kHz | 0.001% (8Ω) |
| Intermodulation distortion | |
| rated power at 250 Hz: 8 kHz=4:1, 8Ω | 0.01% |
| rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω | 0.007% |
| Power bandwidth | |
| both channels driven, -3 dB | 5 Hz~70 kHz (4Ω, 0.03%) 5 Hz~70 kHz (8Ω, 0.02%) |
| Residual hum and noise | 0.5 mV |
| Damping factor | 40 (4Ω), 80 (8Ω) |
| Headphones output level and impedance | 740 mV/330Ω |
| Load impedance | |
| MAIN or REMOTE | 4Ω~16Ω |
| MAIN and REMOTE | 8Ω~16Ω |

■ PRE AMPLIFIER SECTION

Input sensitivity and impedance

| | |
|---|-------------|
| PHONO MM | 2.5 mV/47kΩ |
| MC | 170 μV/220Ω |
| TUNER, CD, TV/AUX 1, VIDEO/AUX 2, TAPE 1/DA TAPE, TAPE 2/VCR | 150 mV/18kΩ |
| PHONO maximum input voltage (1 kHz, RMS) | |
| MM | 170 mV |
| MC | 12 mV |

S/N

| | |
|---|--------------------------------|
| rated power (4Ω) | |
| PHONO MM | 79 dB (IHF, A: 90 dB) |
| MC | 72 dB (IHF, A: 72 dB (250 μV)) |
| TUNER, CD, TV/AUX 1, VIDEO/AUX 2, TAPE 1/DA TAPE, TAPE 2/VCR | 98 dB (IHF, A: 110 dB) |

Frequency response

| | |
|---|---|
| PHONO | RIAA standard curve ±0.2 dB (30 Hz~15 kHz) |
| TUNER, CD, TV/AUX 1, VIDEO/AUX 2, TAPE 1/DA TAPE, TAPE 2/VCR | -3 dB (2 Hz~140 kHz) +0 dB, -0.1 dB (20 Hz~20 kHz) |

Tone controls

| | |
|--------|-----------------------|
| BASS | 50 Hz, +10 dB~-10 dB |
| TREBLE | 20 kHz, +10 dB~-10 dB |

Turnover frequency

| | |
|--------|------------------------|
| BASS | 125 Hz, 250 Hz, 500 Hz |
| TREBLE | 2 kHz, 4 kHz, 8 kHz |

Muting

| | |
|-----------------|-------------------|
| Subsonic filter | 20 Hz, -6 dB/oct. |
|-----------------|-------------------|

Loudness control (volume at -30 dB)

| | |
|------------------------------|--------|
| Output voltage and impedance | 150 mV |
|------------------------------|--------|

| | |
|--------------------|-------|
| TAPE 1, 2, REC OUT | ±1 dB |
|--------------------|-------|

Channel balance, CD, AUX 1, 2

| | |
|----------------------------------|-------|
| Channel separation, CD, AUX 1, 2 | 55 dB |
|----------------------------------|-------|

Technics

Matsushita Electric Trading Co., Ltd.

P.O. Box 288, Centra Osaka Japan

VIDEO SECTION
(TV/AUX 1, VIDEO/AUX 2, TAPE 2/VCR)

Output voltage (at 1V input 75 ohms unbalanced) 1±0.1 Vp-p
Maximum input voltage 1.5 Vp-p
Input/output impedance 75 ohms unbalanced

Notes:
• Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

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GENERAL

Power consumption 670W
Power supply AC 50 Hz/60 Hz, 110V/127V/220V/240V
Dimensions (W×H×D) 430 × 147 × 392 mm
(16-15/16" × 5-25/32" × 15-13/32")
Weight 13.5 kg
(29.8 lb.)

• Specifications are subject to change without notice.
Weight and dimensions shown are approximate.

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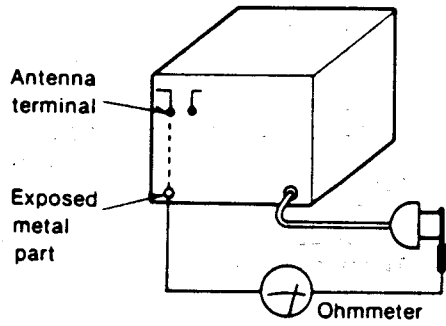
SAFETY PRECAUTION (thes "safety precaution " is applied only in U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

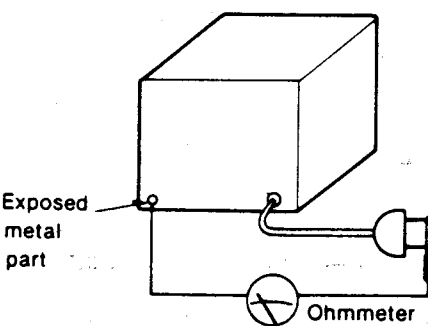
INSULATION RESISTANCE TEST

1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



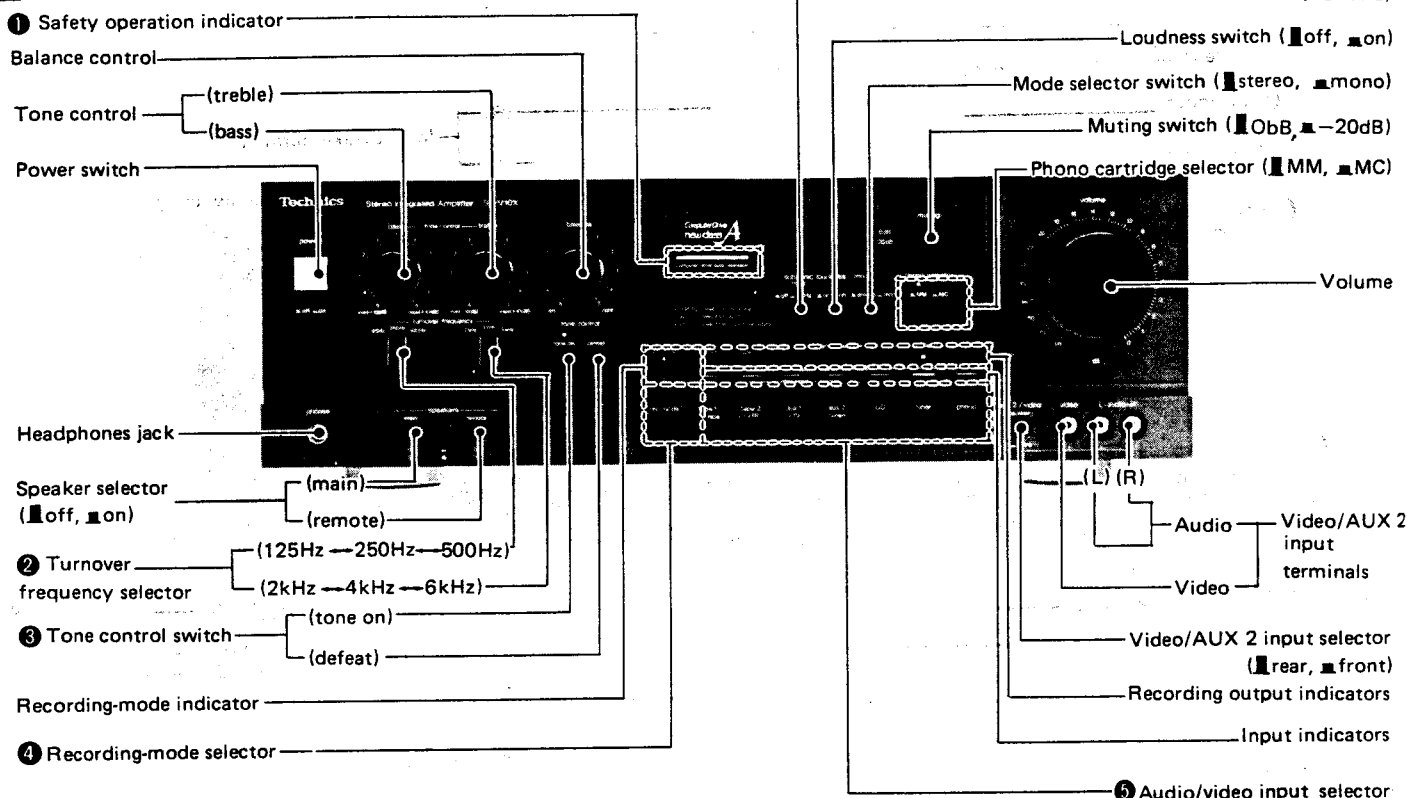
(Fig. A)
Resistance = 3MΩ—5.2MΩ



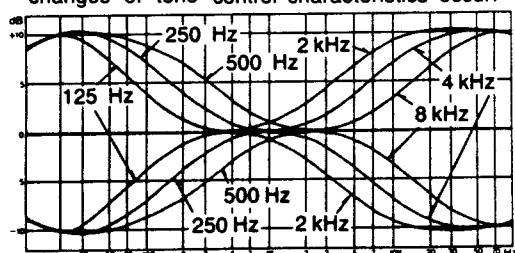
(Fig. B)
Resistance = Approx ∞

4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

LOCATION OF CONTROLS



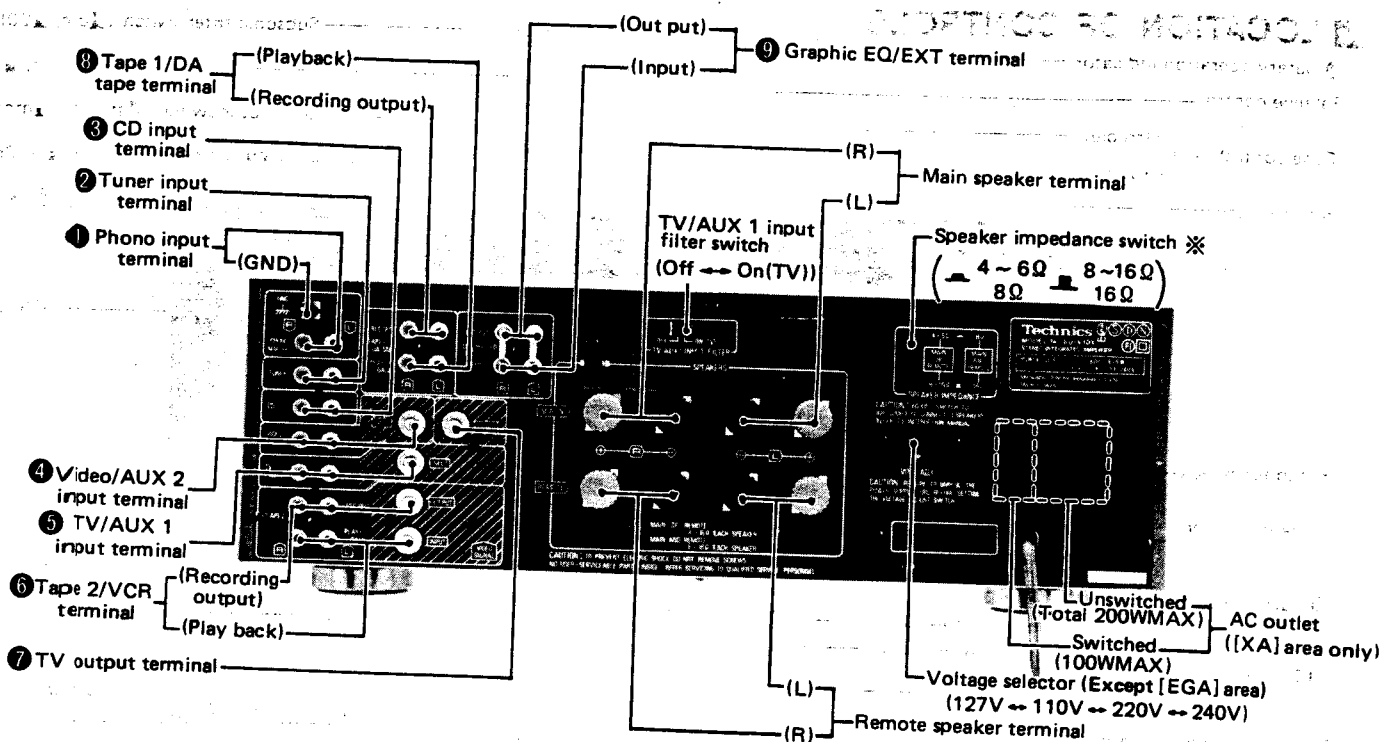
- 1 When the power is switched ON, this indicator flashes for about 5 seconds, and then illuminates steadily when the unit is in the operation condition.
If an abnormal condition in the circuitry is detected, such as DC voltage appearing in the output, or a short-circuit of the positive (+) and negative (-) wires from the speaker terminals, the protection circuit functions and this indicator flashes rapidly. If this occurs, switch the power OFF, find the cause of the trouble and correct it, and then switch the power ON once again.
- 2 These selectors are used to select the range within which changes of tone control characteristics occur.
- 3 This switch is used to switch the tone control circuit (bass, treble) ON or OFF.



- defeat: Set to this position to switch the bass/ treble tone control circuit OFF. Regardless of the positions of the tone controls, the characteristics will remain flat.
- tone on: Set to this position for adjustment of the tone quality with the tone controls.

- 4 This button can be used to switch the mode to the source to be heard (or watched) as selected by one of the source selectors, or to the source to be recorded.
When this button is pressed, the recording-mode indicator flashes, and, when one of the source selectors is pressed, the indicator illuminates steadily. If the indicator flashes, the flashing can be stopped by pressing this button once again.
When the recording-mode indicator is not illuminated:
If one of the source selectors is pressed, the program source to be heard or watched and the recording source will both be switched at the same time.
Note, however, that only the program source to be heard or watched will be switched, and the tape can be monitored during recording, if the "tape 1/DA tape" or "tape 2/VCR" source selector is pressed.
When the recording-mode indicator is flashing:
This is the mode for selection of the source you want to record. If one of the source selectors is pressed, only the recording program source will be switched.
When the recording-mode indicator is illuminated:
This is the mode for listening to (or watching) one source while recording another source. If one of the source selectors is pressed, only the program source to be heard or watched will be switched.
- 5 These buttons have two functions:
When the recording-mode indicator is not flashing or not illuminated, these buttons are used to select the program source to be heard or watched. (The signal is available at the speaker terminals and headphones jack.)
When the recording-mode indicator is flashing, these buttons are used to select the program source to be recorded. (The signal is available at the REC OUT terminals.)

SU-V10X



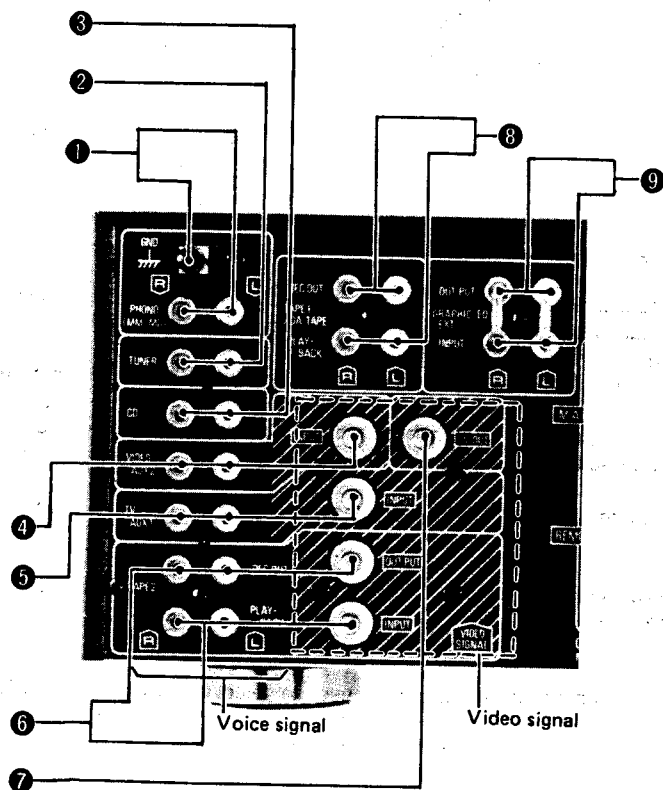
★ [EGA] area is provided without voltage selector.
★ Phono input capacitance is about 150pF.

※ If only the main or the remote speaker system is used (4~16Ω):

4~6Ω (■ — ■):
For speaker impedance of 4~6Ω.

8~16Ω (■ — ■):
For speaker impedance of 8~16Ω.

■ VOICE AND VIDEO SIGNAL TERMINAL



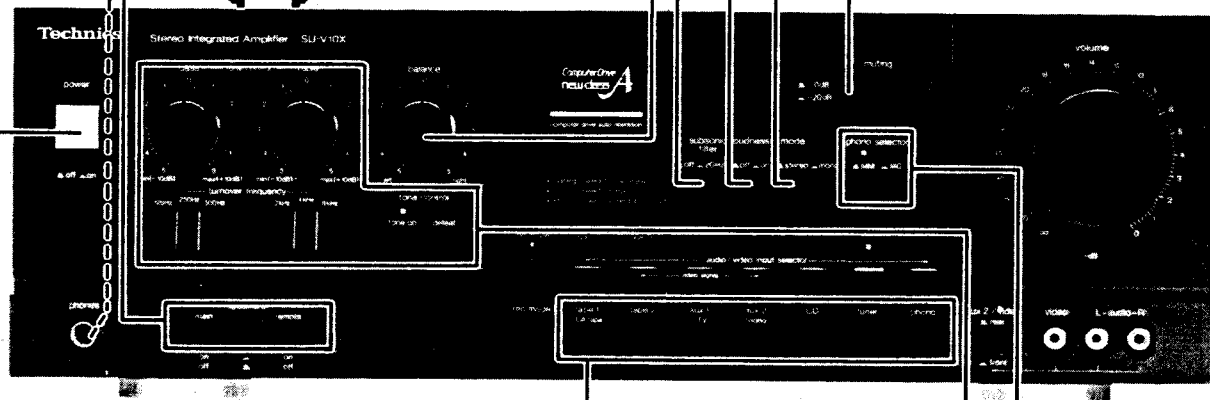
■ If both the main and remote speaker systems (8~16Ω each speaker) are used:

- 1) If the impedance of both systems is 16 ohms, set the speaker impedance selector to "16Ω".
- 2) If the impedance of both systems is 8 ohms, or one is 8 ohms and the other is 16 ohms, set the speaker impedance selector to "8Ω".

■ OPERATION

Standard operating procedures

- 1 Power: "on" (I→II)**
Be sure to reduce the volume level to a low ("∞→60") position before switching ON the power.
- 2 Select the speaker systems to be used.**
If sound from speakers is not wanted, set the speaker selectors to the "off" position.
Headphones (option) Plug type: 1/4-inch phone plug, stereo type
Note: Set volume control to the minimum ("∞") position before connecting headphones.



- 3 Select the program source.**
(The picture and sound can be switched at the same time.)
tape 1/DA tape:
Press this button to listen to a tape or a digital-audio processor.
tape 2/VCR:
Set to this position for playback from a VCR or tape deck.
aux 1/TV:
Press this button to watch a TV.
aux 2/video:
Press this button to watch a video disc player, etc., is connected to the "VIDEO/AUX 2" terminals (on the front or rear panel).
CD:
Press this button to listen to a compact-disc.
tuner:
Press this button to listen to radio broadcasts.
phono:
Press this button to listen to phono discs.

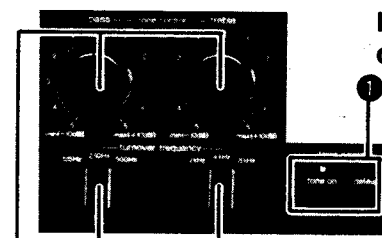
- 4 Operate each component.**
(Refer to the operating instructions for the other equipment used.)

- 5 Adjust the volume level and the tone quality.**

After disc play or radio broadcast, etc. has started

- Adjust left/right volume balance.
- Press inward to the "20 Hz" position to eliminate ultra-low-frequency noise (turntable motor "rumble", etc.).
- Press inward to the "on" position when listening to music at a low volume level (for compensation of the bass range).
- Press inward to the "mono" position to listen to sound monaurally (when adjusting left/right volume balance, etc.).
- Press inward to the "-20 dB" position to temporarily reduce the volume level or for more precise control of the volume level.

- Adjust the tone quality as desired.
- Select either "MM" or "MC" when listening to phono discs.



- 1 "tone on"**
If set to the "defeat" position, tone controls have no effect, and frequency response becomes flat.
- 2 Select the tone range.**
- 3 Adjust the tone quality.**

Suggestions

- If noise is very annoying while listening to an FM or AM broadcast, switch OFF the TV, compact-disc player and turntable.
- Switch OFF the TV power if noise is excessive while listening to an audio tape, compact disc or regular phono disc.
- If a striped pattern appears and makes viewing difficult, switch OFF the digital audio processor.

After use

After listening is finished, power switches of all equipment should be switched OFF.

RECORDING

With this unit, you can record an FM broadcast, etc. while watching TV, or record one sound source while listening to another. In addition, the "aux 2/video" terminals on the front panel can be used for easy audio or video tape editing.

- 1 Power: "on" (■→■)**
Be sure to reduce the volume level to a low ("∞→60") position switching ON the power.
- 2 Select the speaker systems to be used.**
●Recording-mode selector
- 3 Press.**
The recording mode indicator will flash.
(Refer to note 1.)
- 4 Select the desired program source for recording.**
(The recording mode indicator and recording output signal indicator will illuminate.)
●Press this button in order to record from a tape deck connected to the "TAPE 1/DA TAPE" terminals to a tape deck connected to the "TAPE 2/VCR" terminals.
●Press this button in order to record from a tape deck connected to the "TAPE 2/VCR" terminals to a tape deck connected to the "TAPE 1/DA TAPE" terminals.
- 5 Begin recording.**
By using the controls on the tape deck, adjust the recording level. Then begin recording.
- 6 Set to the position corresponding to the program source to be heard.**
(One of the input signal indicators will illuminate.)
●If the program source being recorded is selected:
The sound going to the tape deck will be heard.
●If the tape deck making the recording is selected:
The sound going through the tape deck will be heard.
●If some other sound source is selected:
The sound of the selected source can be heard. (This will not effect the recording which is being made.)
To record one program source and listen to another:
Follow steps 3 through 6.

Notes:

1. While a recording is in progress:
Do not press the recording-mode selector, because the recording will be interrupted and the recording source will be changed.
2. For timer recordings:
Be sure to check that the recording-mode indicator is illuminated steadily (not flashing).
Note that the recording might not be made if the recording-mode indicator is flashing.

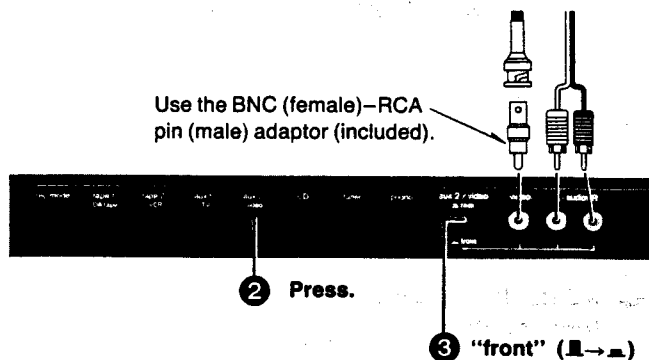
Tape-to-tape recording of video tapes

A copy of a video tape can be made by connecting a video deck for playback to the "aux 2/video" terminals on the front panel.

Note:

Follow these steps in addition to step 4 above.

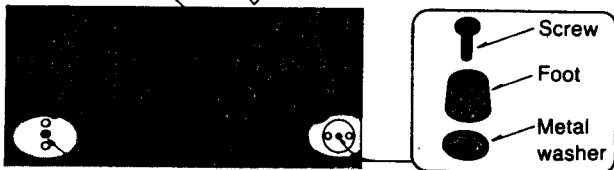
- 1 Connect the VCR to be used for playback to the "aux 2/video" terminals on the front panel.**



● Placement on top of other equipment

To accommodate equipment of different depths, use the additional feet (included) to support this unit.

Bottom of this unit ↓ Rear



● If a TV is connected to this unit

● If speakers are placed near the television

Move the speakers away from the TV to a position where the picture is improved if the TV's picture color changes or distortion appears on the TV screen.

(This is not necessary, however, for shielded speakers.)

● If a turntable is placed near the TV

Place it on the right side of the TV.

TV magnetism might otherwise affect the record player's cartridge performance, causing interference noise.

■ PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

- No sound is heard when the power is switched ON.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of this unit are used.

If this occurs, follow the procedure outlined below:

1. Switch OFF the power.
2. Determine the cause of the problem and correct it.
3. Switch ON the power once again.

Note:

When the protection circuitry functions, the unit will not operate unless the power is first switched OFF and then ON again.

■ BEFORE REPAIR AND ADJUSTMENT

- (1) Turn off the power supply. Using a 10Ω, 5W resistor, shortcircuit both ends of power supply capacitors (C901~904, 10000μF) in order to discharge the voltage.
- (2) Before turning the power supply on, after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 50/60 Hz in NO SIGNAL mode should be shown below with respect to supply voltage 110V/127V/220V/240V.

| Power supply voltage | | AC110V | AC127V | AC220V | AC240V |
|----------------------|---------|-------------|-------------|-------------|-------------|
| Consumed current | 50/60Hz | 270 ~ 730mA | 250 ~ 670mA | 135 ~ 370mA | 125 ~ 340mA |

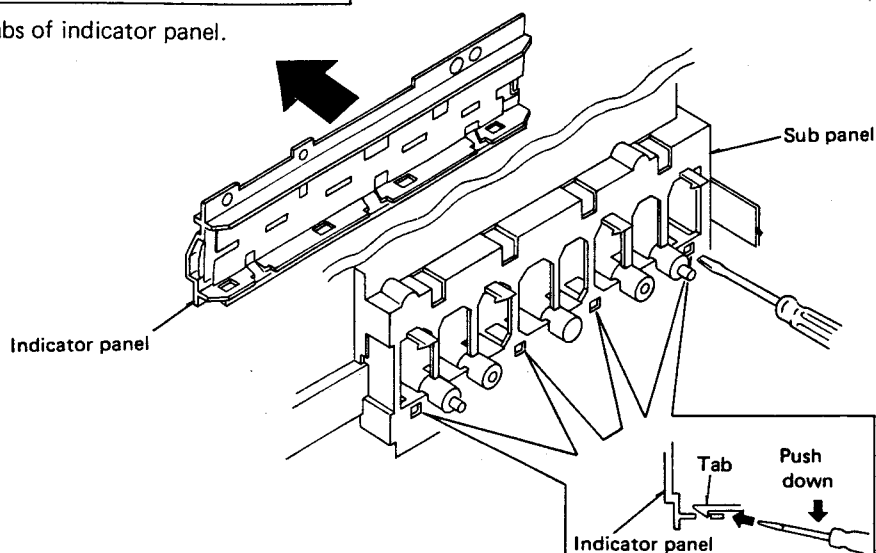
■ DISASSEMBLY INSTRUCTIONS

| | | |
|----------------|------------------------------|--|
| Ref. No. 1 | How to remove the cabinet | |
| Procedure 1 | 1. Remove the 7 screws (①~⑦) | |

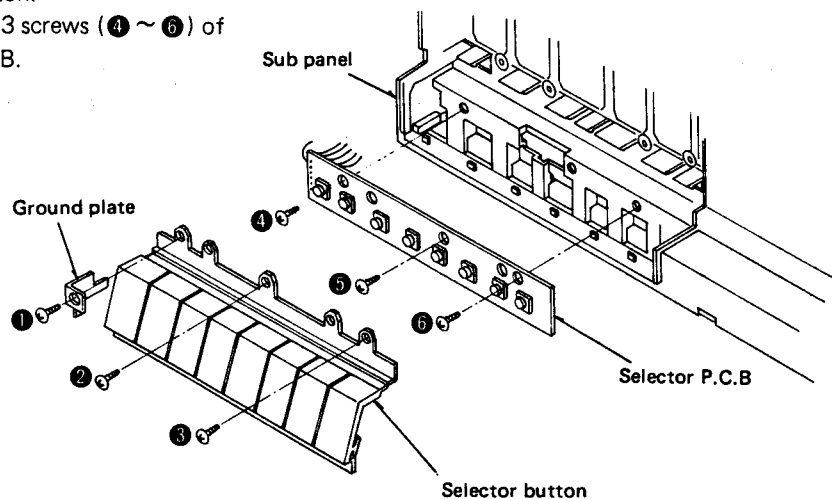
| | | |
|-------------------------------|---|--|
| Ref. No. 2 | How to remove the front panel | 2. Remove the front panel (refer to the arrow). |
| Procedure 1 → 2 | Remove the 5 screws (① ~ ⑤) and 4 nuts (⑥ ~ ⑨). | <div data-bbox="858 286 1189 846"> </div> <div data-bbox="1230 443 1485 857"> <p>Note Remove the flat cable</p> <p>Flat cable Connector</p> <p>Pushing the connector and extract the flat cable</p> </div> |
| Ref. No. 3 | How to remove the sub panel | |
| Procedure 1 → 2 → 3 | 1. Push down the 10 tabs (up side) and Push up the (under side) of sub panel. | <div data-bbox="405 981 1023 1496"> </div> <div data-bbox="1118 958 1465 1205"> <p>Front panel Sub panel Push down</p> </div> <div data-bbox="948 1330 1353 1496"> <p>Sub panel Front panel Push up</p> </div> |
| Ref. No. 4 | How to remove the AUX2/VIDEO P.C.B and speaker selector P.C.B | 2. Pull the tab (up side) and 2 tabs (under side) of Speaker selector P.C.B. |
| Procedure 2 → 3 → 4 | 1. Pull the 3 tabs (up side) and 4 tabs (under side) of AUX2/VIDEO Input P.C.B. | <div data-bbox="368 1675 762 2134"> </div> <div data-bbox="836 1675 1342 2112"> </div> |

Ref. No.
5**How to remove the indicator panel**Procedure
1→2→3→4→5

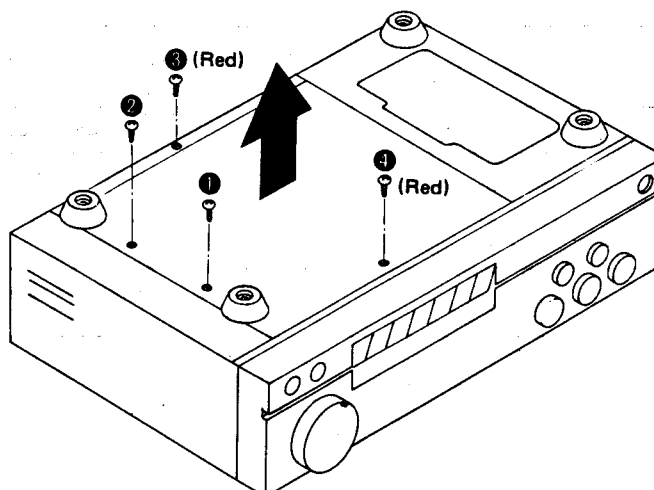
1. Pull the 4 tabs of indicator panel.

Ref. No.
6**How to remove the selector button and selector P.C.B**Procedure
1→2→3→4→5→6

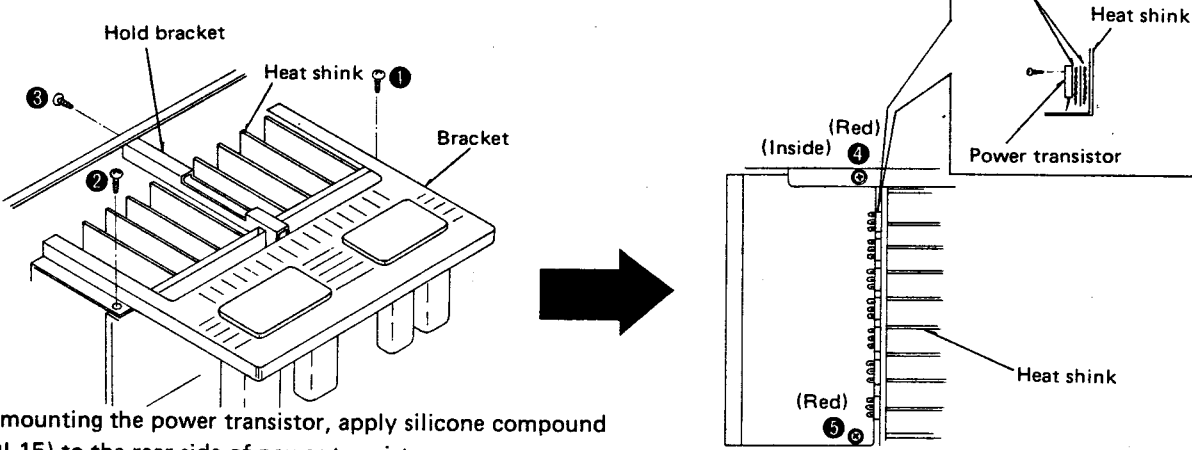
1. Remove the 3 screws (① ~ ③) of selector button.
2. Remove the 3 screws (④ ~ ⑥) of selector P.C.B.

Ref. No.
7**How to remove the bottom board**Procedure
7

1. Remove the 4 screws (① ~ ④).



| | | |
|-------------------------------|---|--|
| Ref. No. 8 | How to remove the power transistor | |
| Procedure 1 → 7 → 8 | <ol style="list-style-type: none"> 1. Remove the 2 screws (①, ②) of bracket and screw (③) of hold bracket. 2. Unsolder the power transistor. 3. Remove the 2 screws (④, ⑤) of heat sink. | |



● When mounting the power transistor, apply silicone compound (SZZ0L15) to the rear side of power transistor.

■ FUNCTION OF TERMINAL (Ic_Q Controller IC801 : MN1421STA)

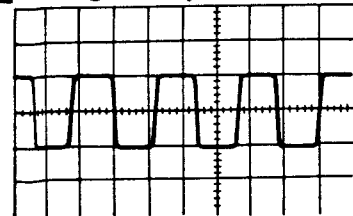
| Pin No. | Mark | Name of block | Description of terminal |
|---------|------------------|-----------------------------|--|
| 1 | Vss | Power supply input terminal | Ground |
| 2 | CO ₉ | Output | It delivers Ic _Q control signal through input port A (⑨) (thermal sensor) and input port B (⑪, ⑫) (signal sensor). [Output "H"] |
| 3 | CO ₈ | | |
| 4 | CO ₇ | | |
| 5 | CO ₆ | | |
| 6 | CO ₅ | | |
| 7 | AI ₃ | | |
| 8 | AI ₂ | | |
| 9 | AI ₁ | Input | When 60°C (140°F) sensor of power amplifier operates, the input level becomes "L". |
| 10 | AI ₀ | — | Ground |
| 11 | BI ₃ | Input | Input level changes to "L" as effective output 2V signal sensor of power amplifier operates. |
| 12 | BI ₂ | | Input level changes to "L" as effective output 5V signal sensor of power amplifier operates. |
| 13 | BI ₁ | — | — |
| 14 | BI ₀ | — | — |
| 15 | EO ₀ | — | — |
| 16 | EO ₁ | | |
| 17 | EO ₂ | | |
| 18 | EO ₃ | Output | Indicator "Computer drive auto operation" light up at "H" output. |
| 19 | TST | Test input terminal | Terminal for testing LSI (Grounded) |
| 20 | RST | Reset input terminal | All outputs are cleared or reset with input at "L" (It is connected to power supply circuit) |
| 21 | SNS ₀ | — | Not used in this unit |
| 22 | SNS ₁ | Input | Input level changes to "H" as power amplifier output short-circuit operates. |

| Pin No. | Mark | Name of block | Description of terminal |
|---------|----------|-----------------------------|---|
| 23 | PRE HEAT | — | No used |
| 24 | DO1 | — | Ground |
| 25 | DO2 | — | Ground |
| 26 | DO3 | Output | Output relay turns ON with output at "H" |
| 27 | VDD | Power supply input terminal | Apply 5V. |
| 28 | OSC | OSC input terminal | Clock signal (about 300 kHz) can be obtained by internal oscillation circuit. |

■ FUNCTION OF TERMINAL (Analog Function Control IC251 : μ PD7506C043)

| Pin. No. | Symbol | Input/Output | Active | Description of terminal |
|----------|-----------|--------------|--------|--|
| 1 | P43 | — | — | Not used in this unit. |
| 2 | x 2 | — | — | Not used in this unit. |
| 3 | P03/x 1 | Input | — | It detects the level of pin ⑤. Push (once) the "rec selector" switch. Selection of input selector 4.3V 0V |
| 4 | P20/PSTB | Output | H | Clock output port for analog switch. Clock signal output to IC201 pin ⑮ and IC202 pin ⑮ during data transmission. [Refer to A] |
| 5 | P21/PTOUT | Output | H | Indicator "rec selector" light up at "H". Push (once) the "rec selector" switch. Selection of input selector 4.3V 0V |
| 6 | P22 | Output | H | Data output for analog switch. Data signal output to IC201 pin ⑮ and IC202 pin ⑮. [Refer to A] |
| 7 | P23 | Output | H | Strobe output port for analog switch. Strobe signal output to IC201 pin ⑮ and IC202 pin ⑮ during data transmission. [Refer to A] |
| 8 | P60 | Output | H | Rec side indicator 3-bit output. Rec indicator drive signal output to IC253 pins ⑮ ~ ⑰. [Refer to E] |
| 9 | P61 | | | |
| 10 | P62 | | | |
| 11 | P63 | Input | H | Stop mode sensing input. With high pulse signal input, the stop command is executed and the mode is shifted to standby. 4.4V 0V Power switch "OFF" |
| 12 | CL1 | — | — | External clock oscillation frequency (400KHz) input port. [Refer to C] |
| 13 | CL2 | — | — | Not used in this unit. |
| 14 | VDD | — | — | Power supply input terminal. (Apply 4.4V) |
| 15 | RESET | Input | H | Input terminal for reset signal. 4.3V 0V Power switch "ON" 1V 0V Power switch "OFF" |
| 16 | P10 | Input | H | Input terminal for key return signal from external key matrix. [Refer to D] |
| 17 | P11 | | | |
| 18 | P12 | | | |
| 19 | P13 | | | |
| 20 | P50 | | | |
| 21 | P51 | | | |
| 22 | P52 | | | |
| 23 | P53 | Output | H | Muting signal output during input switch or Rec switch operation. 4.3V 0V Push the each input selector or muting switch. |
| 24 | P00 | Input | — | Mode shifting port. $\begin{cases} \text{H} = \text{Function 1 mode} \\ \text{L} = \text{Function 2 mode} \end{cases}$ The input of this unit is "H" (4.9V) because the mode used is Function 1. |
| 25 | P40 | Output | H | Input side indicator 3-bit output. Input indicator drive signal to IC254 pins ⑮ ~ ⑰. [Refer to E] |
| 26 | P41 | | | |
| 27 | P42 | | | |
| 28 | VSS | — | — | Ground terminal. |

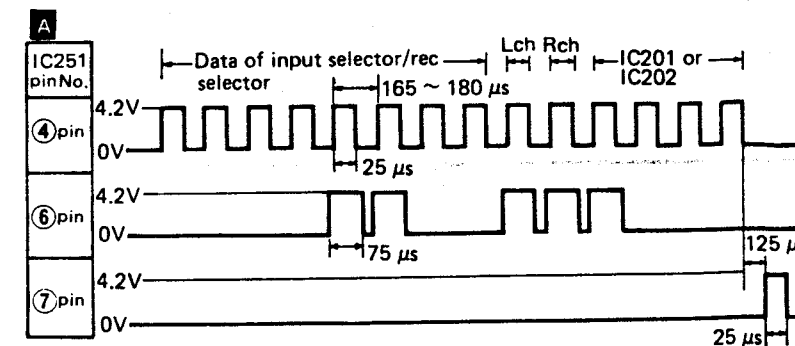
■ IC251 ⑫ 2V DIV/1 μ SEC



- ① Push the rec selector switch. ("rec indicator" blinking)
- ② Push the each input selector switch.

| Pin No. of IC251 | | L = 0V, H = 4.3V | | |
|------------------|---|------------------|---|--|
| Input selector | ⑧ | ⑨ | ⑩ | |
| phono | L | H | L | |
| tuner | H | L | L | |
| CD | L | H | L | |
| video/aux | H | H | L | |
| tape 2 | H | L | H | |
| tape 1/DA tape | L | L | H | |

| Pin No. of IC251 | | L = 0V, H = 4.3V | | | |
|------------------|---|------------------|---|---|--|
| Input selector | ⑮ | ⑯ | ⑰ | ⑱ | |
| phono | L | L | L | H | |
| tuner | L | L | H | L | |
| CD | L | H | L | L | |
| video/aux | H | L | L | L | |
| tape 2 | L | L | H | L | |
| tape 1/DA tape | L | L | L | H | |
| rec selector | H | L | L | L | |

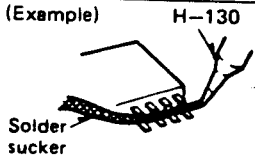

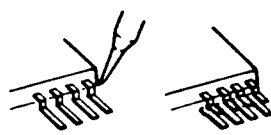
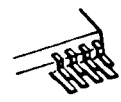


| Pin No. of IC251 | | ⑮ | ⑯ | ⑰ |
|------------------|--|---|---|---|
| Input selector | | | | |
| phono | | L | L | L |
| tuner | | H | L | L |
| CD | | L | H | L |
| video/aux | | H | H | L |
| tape 2 | | H | L | H |
| tape 1/DA tape | | L | L | H |
| rec selector | | L | L | L |
| muting | | L | L | L |

■ TERMINAL GUIDE OF TRANSISTORS, DIODES AND IC'S

| | | | |
|--|----------------------------|----------------------------|----------------------------|
| TC9163N 28 Pin TC9164N 28 Pin MN1421STA 28 Pin μ PD7506C043 28 Pin AN7062 18 Pin DN74LS145 16 Pin MN4069UB 14 Pin μ PD4066BC 14 Pin | M5219P M5218P | AN78M05 | 2SK369 |
| 2SA1123, 2SD592ANC, 2SC1845 2SA992, 2SC2631, 2SB621, 2SC3112 2SC1685, 2SA1370, 2SA722 | 2SC3467 | 2SK301 2SK170 | 2SC3298A 2SA1306A |
| LN41YCPHL | LN81CPHL | 20A90 | MA4180M |
| MC911 | MA162A | MA167 | SVDS10VB20F 1SR35200 |
| MA4200 MA4150 MA4068 | MA4200 MA4150 MA4068 | MA4200 MA4150 MA4068 | MA4200 MA4150 MA4068 |

■ HOW TO REPLACE IC'S (Small outline type)

| Replacing procedure | | | Cautions |
|---------------------|---|---|---|
| 1 | Reduce the amount of solder on each pin of the integrated circuit by use of a solder sucker. | (Example) H-130  | <ul style="list-style-type: none"> ● Recommended toolSpecial soldering iron *H605M and H-130. *H605E and H-130. ● Do not touch the soldering iron to the area for a long time. It may otherwise cause removal of the print foil. ● When shifting the pin upward, do the job quickly while the solder is melting. If the solder is hard, it may cause removal or breakage of the print foil. ● When using a pencil type soldering iron. <ol style="list-style-type: none"> 1. Completely remove the solder from each IC pin by use of solder sucker. 2. Raise each pin by means of an eyelet, hold the pliers then remove IC package from P.C.B. |
| 2 | Melt the solder on the pin (one electrode) with the soldering iron. |  | |
| 3 | While the solder is melting, shift the pin upward by the soldering iron to remove it from the foil. |  | |
| 4 | Remove each pin from the foil according to the above-mentioned procedure. |  | |

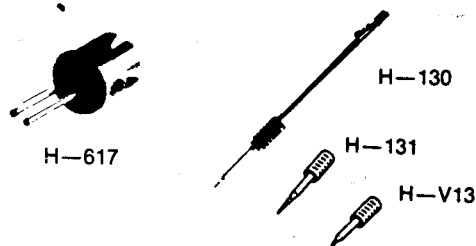
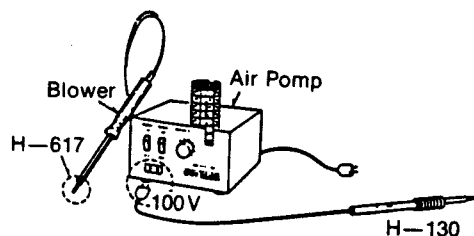
* Special soldering iron

(Refer to Technical Information, ORDER NO. GAD84125486T1)... For U.S.A. and Canada
(Refer to Technical Information, ORDER NO. GAD84115476T8)... For others

● H-605 Spot Heater (hot-air solder iron)

This device that uses hot air to melt solder was developed to remove Flat-Package ICs, RHCs and chip parts.

- H-605M (For 120V power source)
- H-605E (For 200V/220V/240V power source)



● H-617 Twin Nozzle (for spot heater)

Special nozzle for the removal of RHCs and chip resistors.
(Nozzle diameter : 1.0 mm x 2)

● H-130 Slim Pencil Solder Iron

An ultrasmall ceramic heater solder iron is extremely handy for soldering chip parts, RHCs, ICs, etc., to high-density circuit boards.

Features:

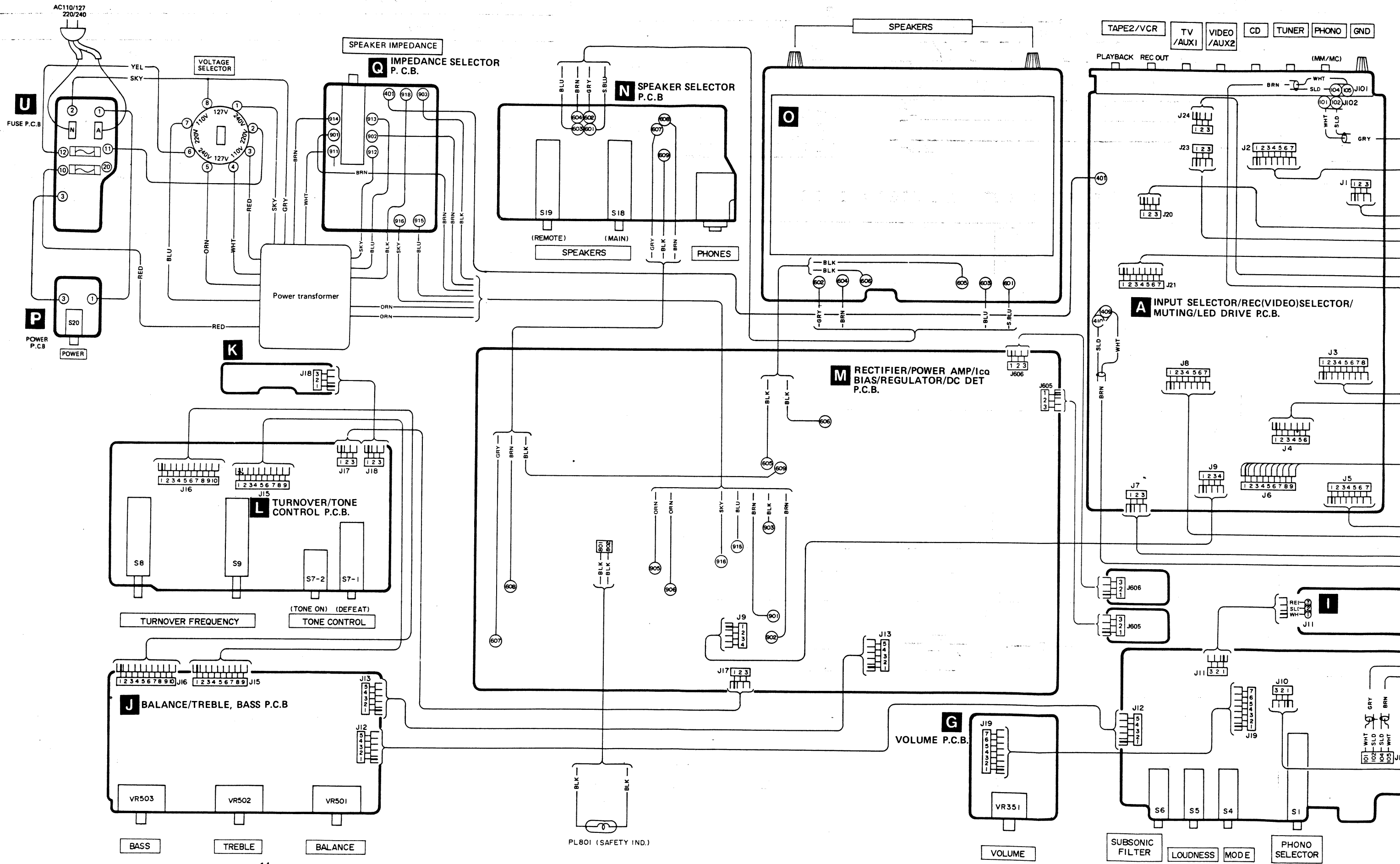
- Rated power: 100V, 15W
- Max. temp.: 400°C
- Heater: ceramic (long life)
- Insulation resistance: 100MΩ
- Length: 178 mm
- Weight: 16 g (not including cord)

● H-131, H-V13 Cap Bits

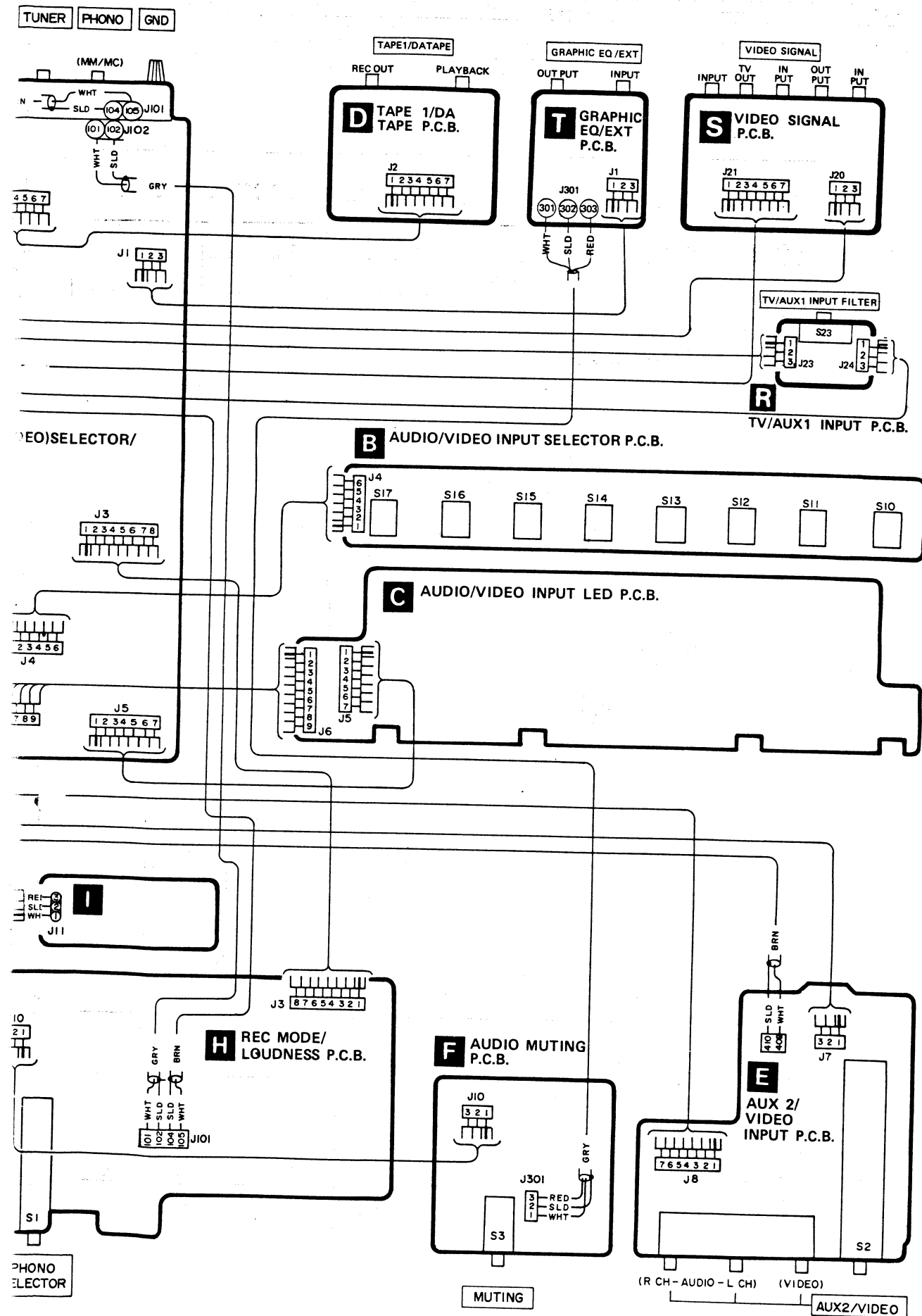
Solder tip for the slim pencil Solder Iron and is composed of a bit holder and a corrosion resistance solder tip. Permits changing of solder tips even while still hot.

- Solder tip: 0.3 mm

WIRING CONNECTION DIAGRAM

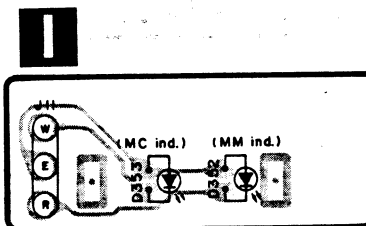
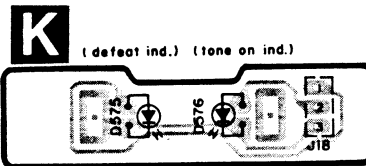
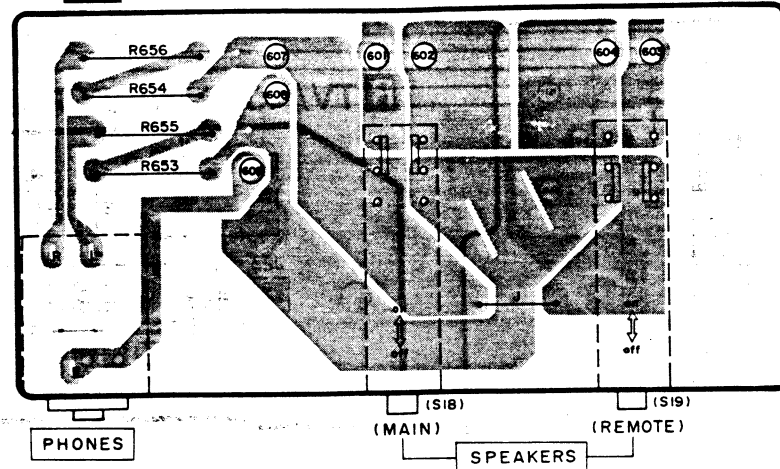


SU-V10X

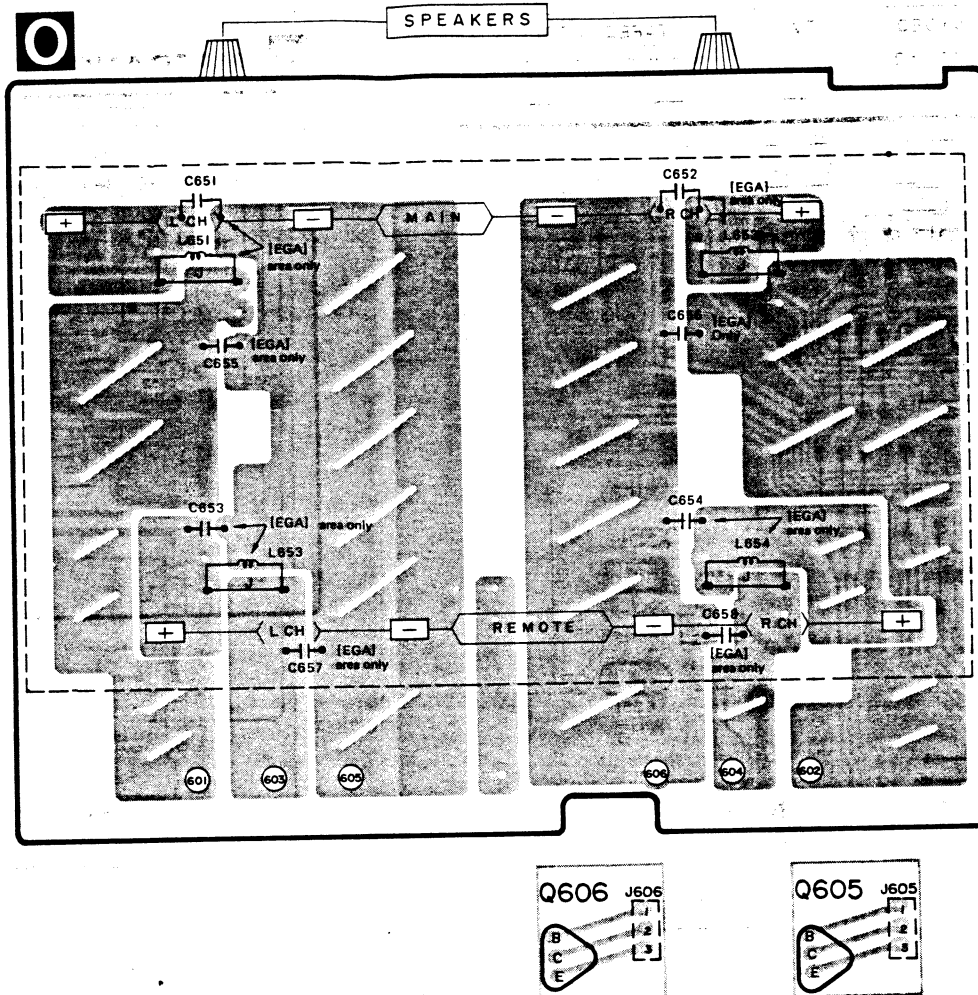
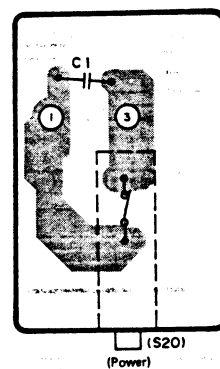


PRINTED CIRCUIT BOARDS

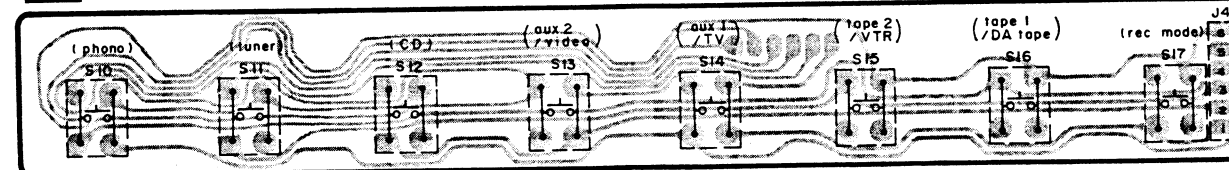
N SPEAKER SELECTOR P.C.B.



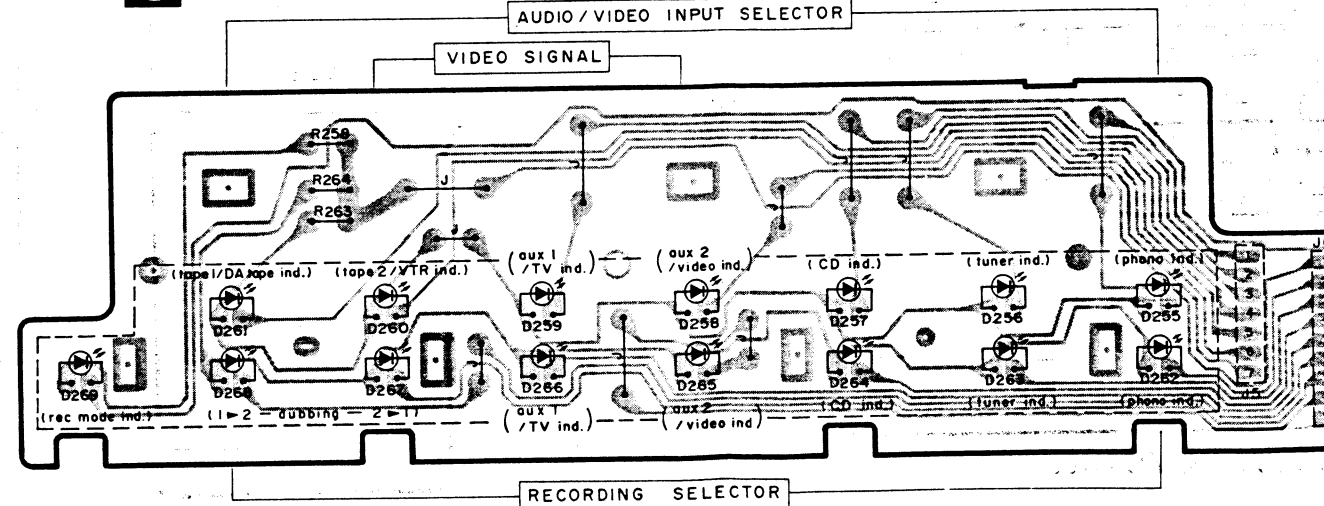
P POWER P.C.B.



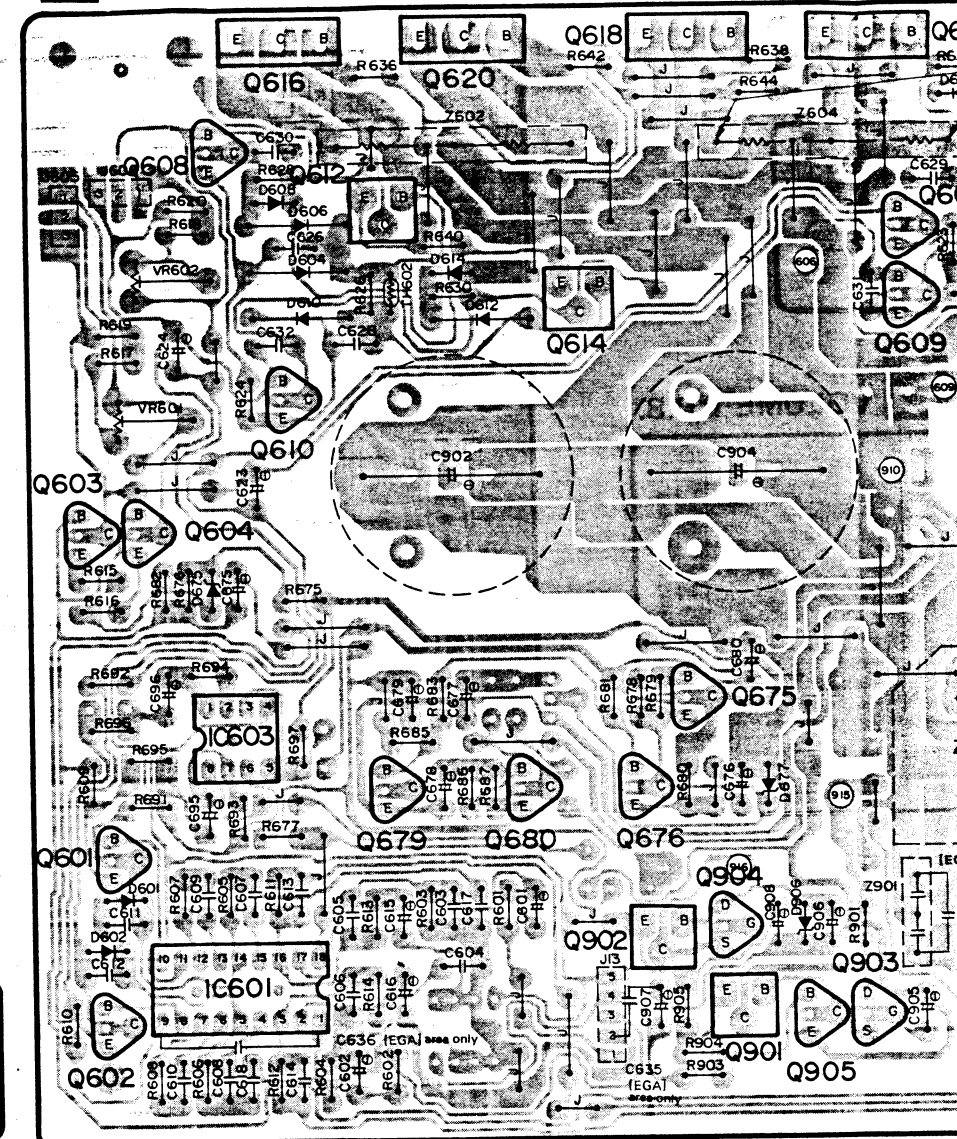
B AUDIO/VIDEO INPUT SELECTOR P.C.B.



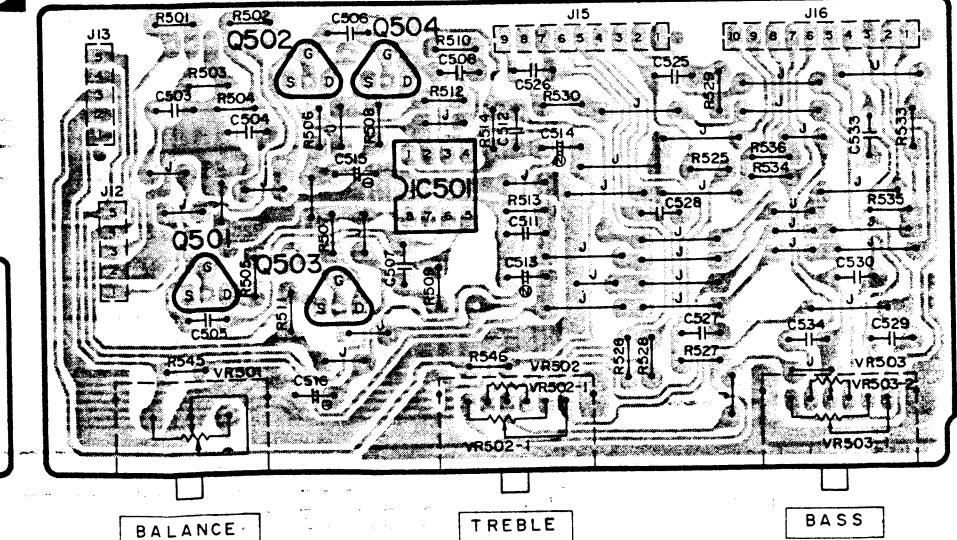
C AUDIO/VIDEO INPUT LED P.C.B.



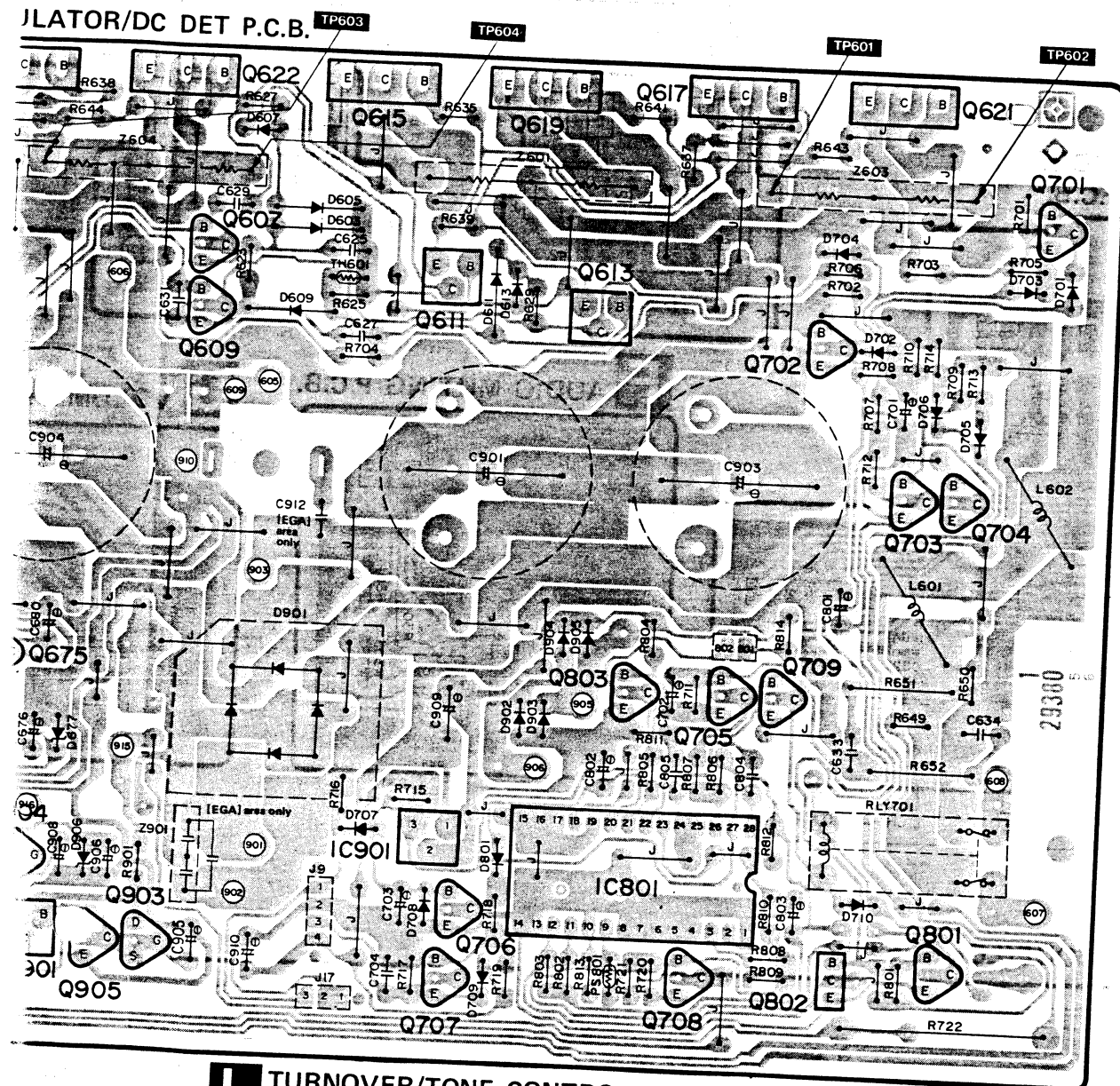
M RECTIFIER/POWER AMP/IC BIAS/REGULATOR/DC DET P.C.B.



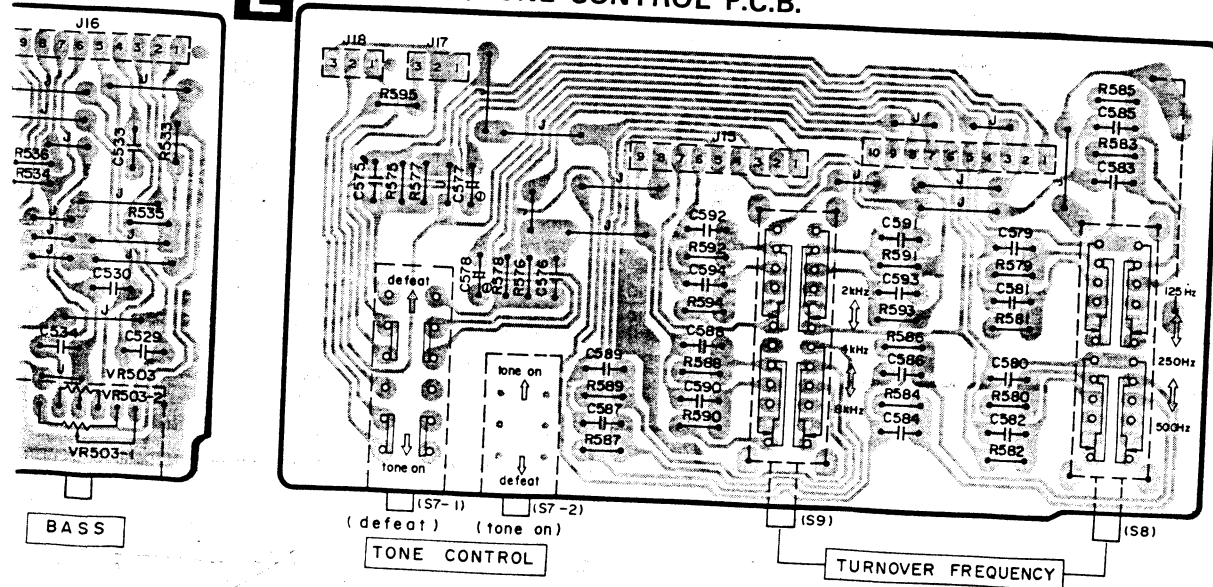
J BALANCE/TREBLE, BASS P.C.B.



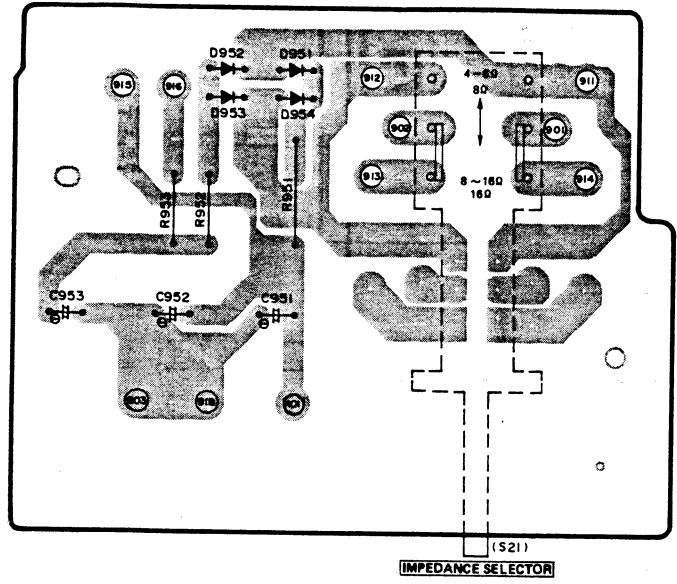
PLATOR/DC DET P.C.B.



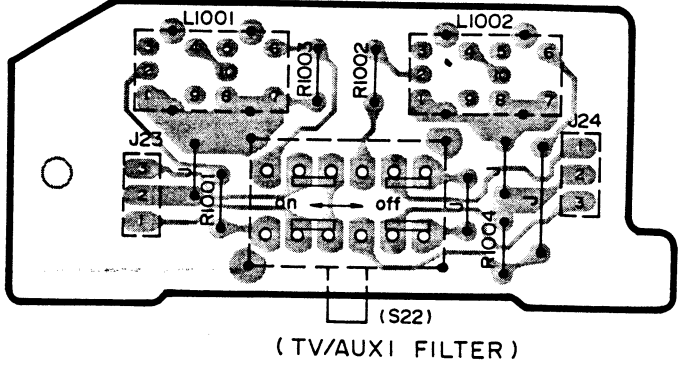
TURNOVER/TONE CONTROL P.C.B.



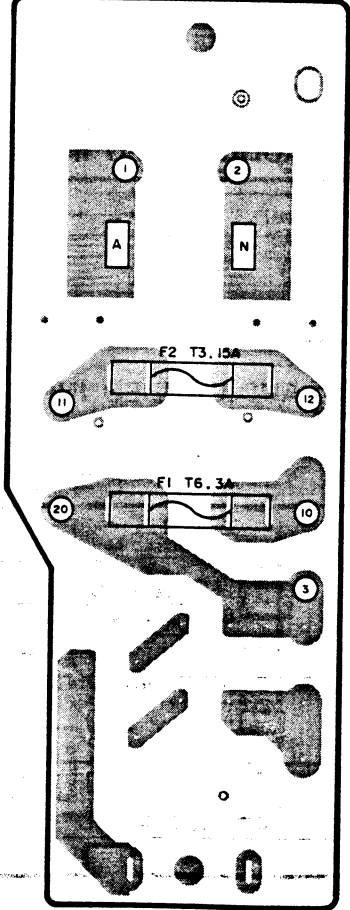
Q MPEDANCE SELECTOR P.C.B.



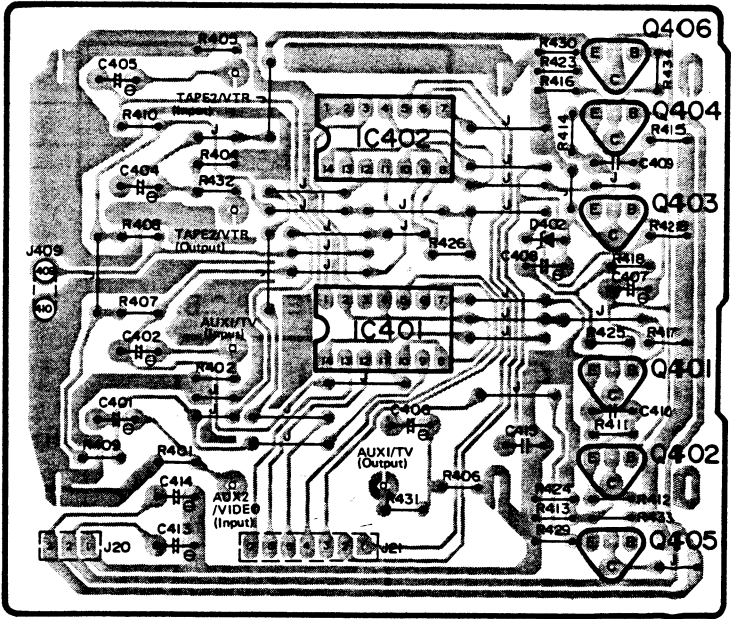
R TV/AUX1 INPUT FILTER P.C.B.



U FUSE P.C.B.



S VIDEO SIGNAL P.C.B.



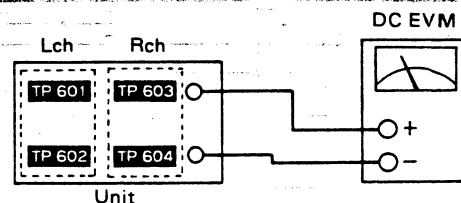
MEASUREMENT AND ADJUSTMENTS

Control positions and equipment used

- Volume knob ∞
- Main speaker selector off
- Remote speaker selector off
- Recording selector aux 1/TV
- Speaker impedance swith. 16Ω
- AC and DC electronic voltmeter (EVM)
- Signal generator
- Resistor (0.33Ω)

Idling (ICQ) Adjustment

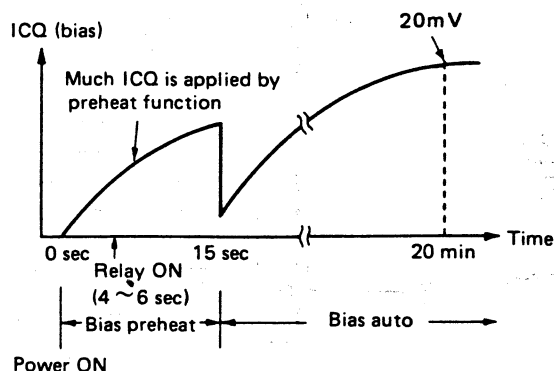
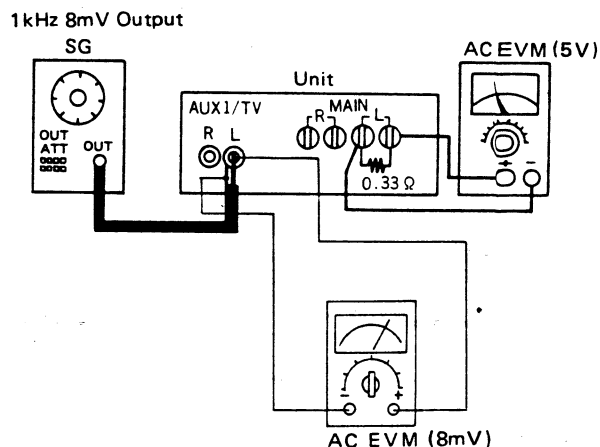
1. Test equipment connection is shown in figure.
2. Turn the ICQ control volume (VR601, VR602) counter-clockwise.
3. After turning the power switch "on", adjust VR601 (left channel) and VR602 (right channel) about 20mV respectively as in Fig. 1.



Overload detection circuit check

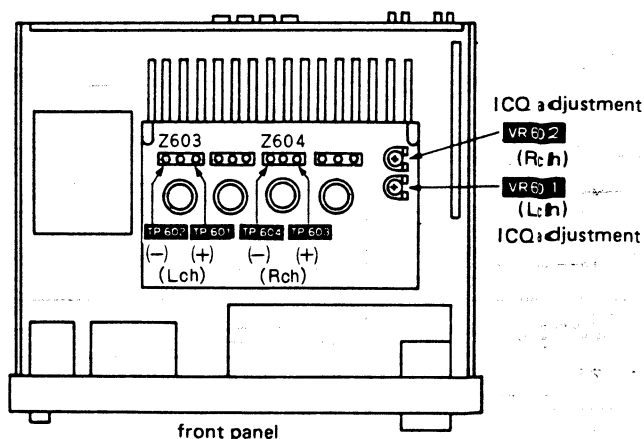
1. Test equipment connection is shown in figure
2. Apply 1 kHz, 8 mV (output about 5 V) signal to the aux. input terminal (aux 1/TV).
3. The speaker switch turned "off".
4. Connect 0.33Ω (about 1 W) resistor to main speaker terminal.
5. With main speaker switch turned "on", make sure that
 - relay is "OFF" and
 - computer drive auto operation blinks.
6. Also check the right (R) channel in the same manner as mentioned above.

(Note) When turning the relay on again, wait for a while after turning the power supply OFF. Otherwise, it will not be reset even when the circuit and load are in normal conditions.

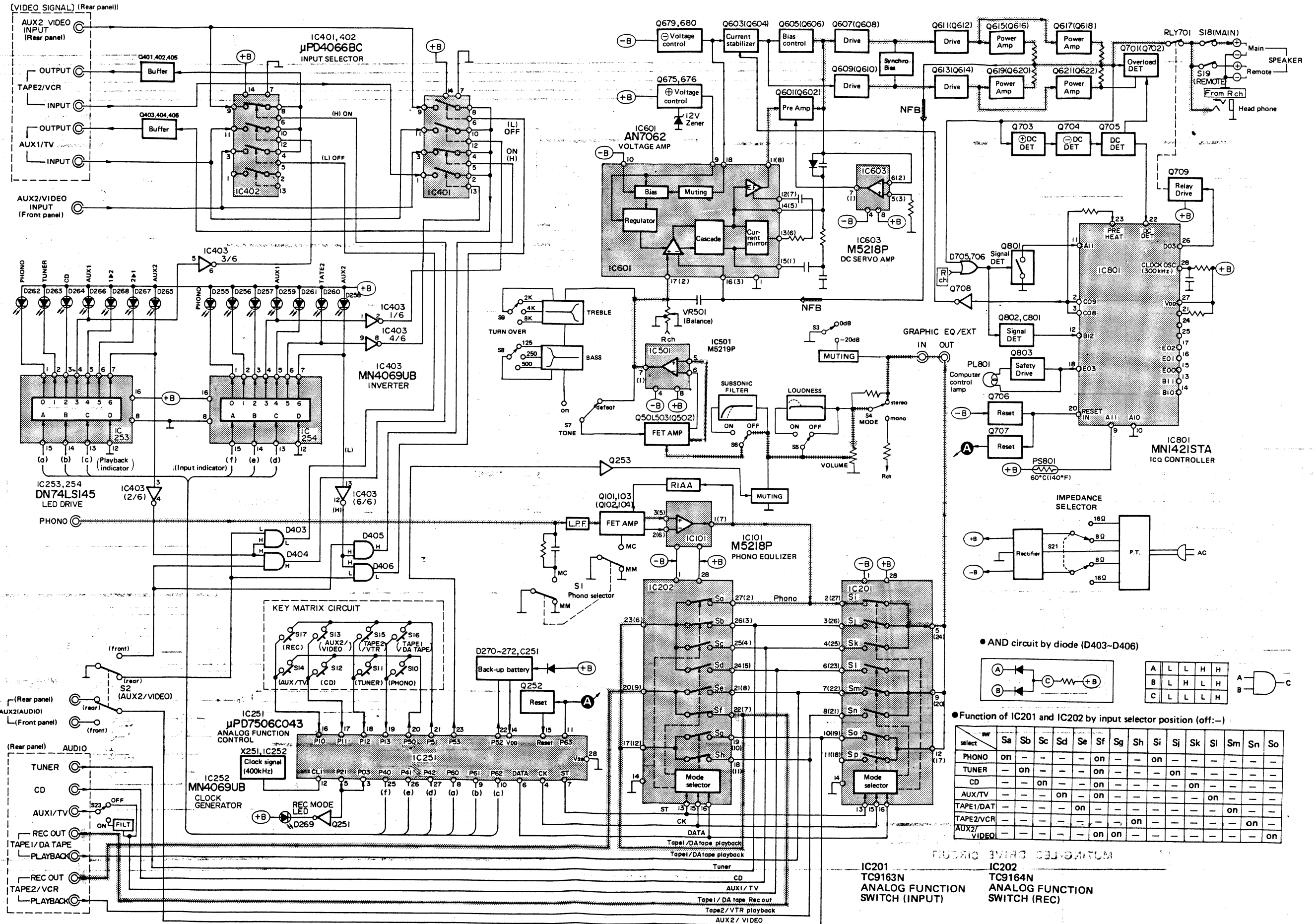


[Fig. 1]

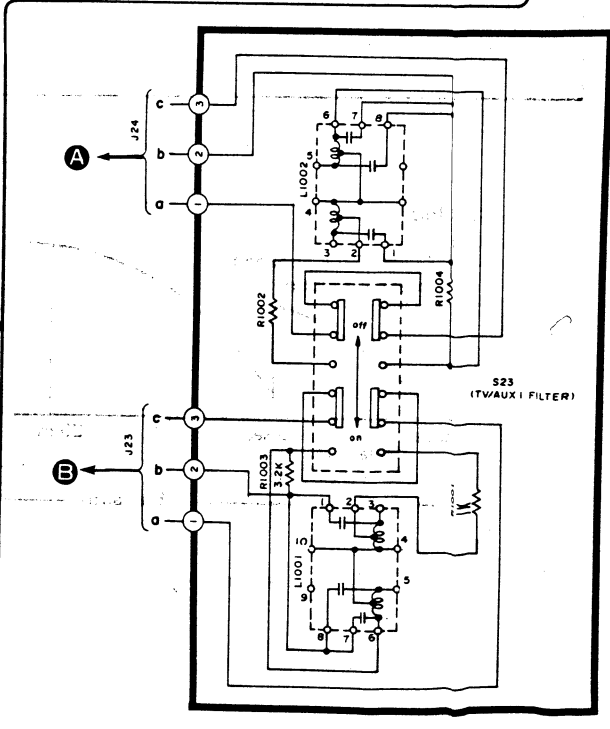
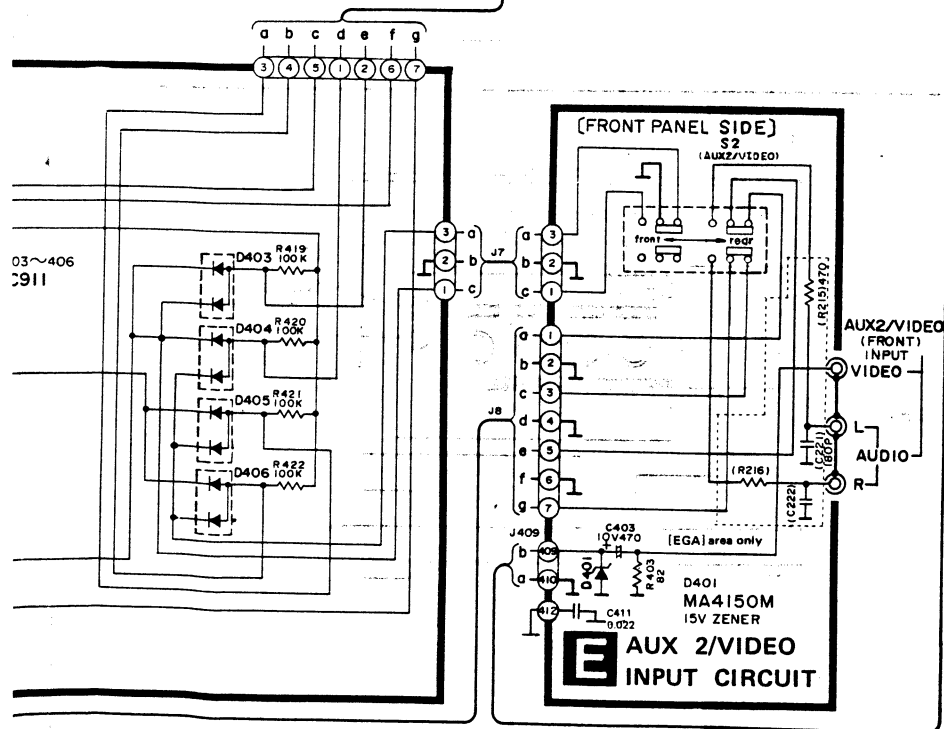
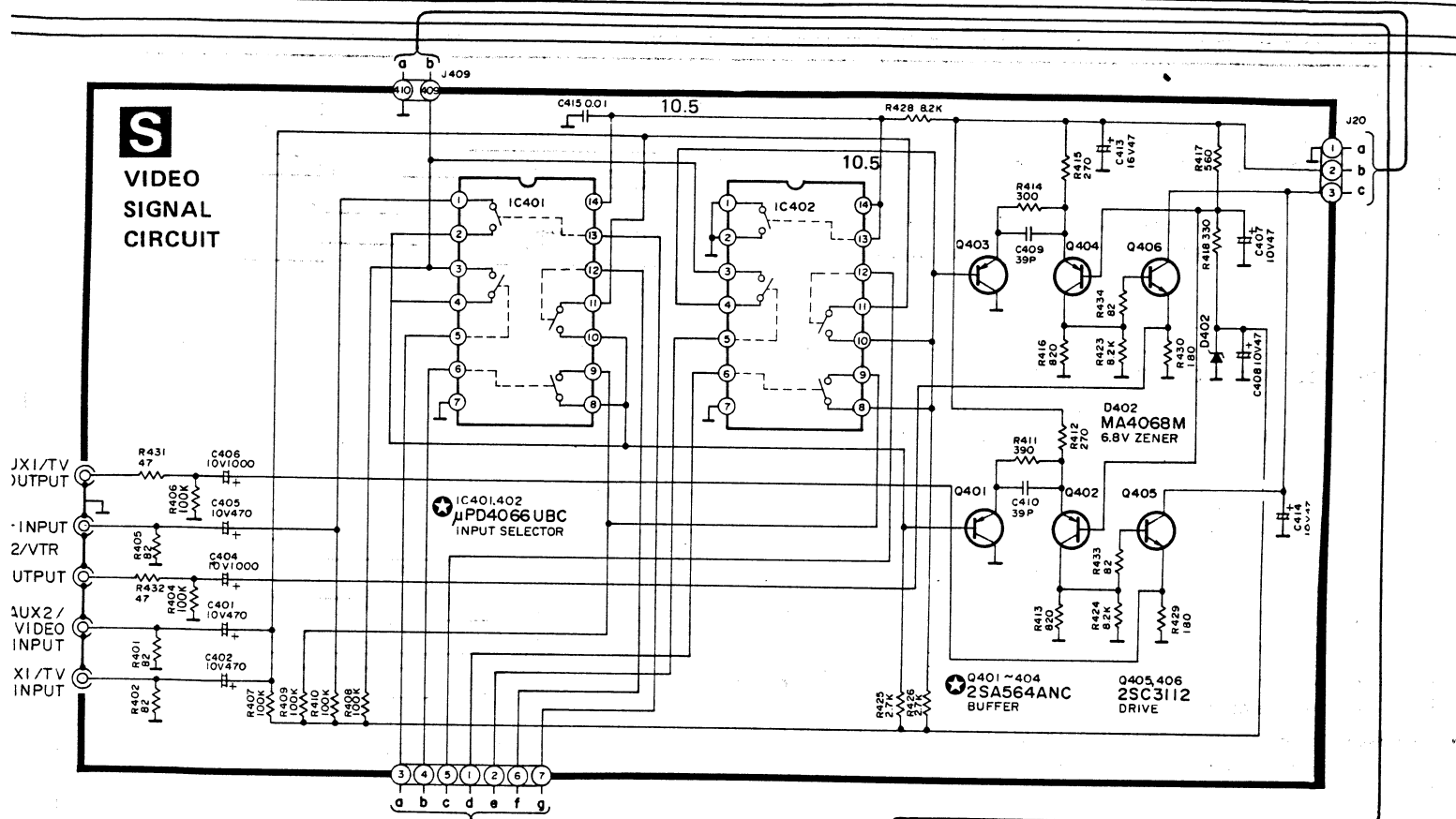
Adjustment points

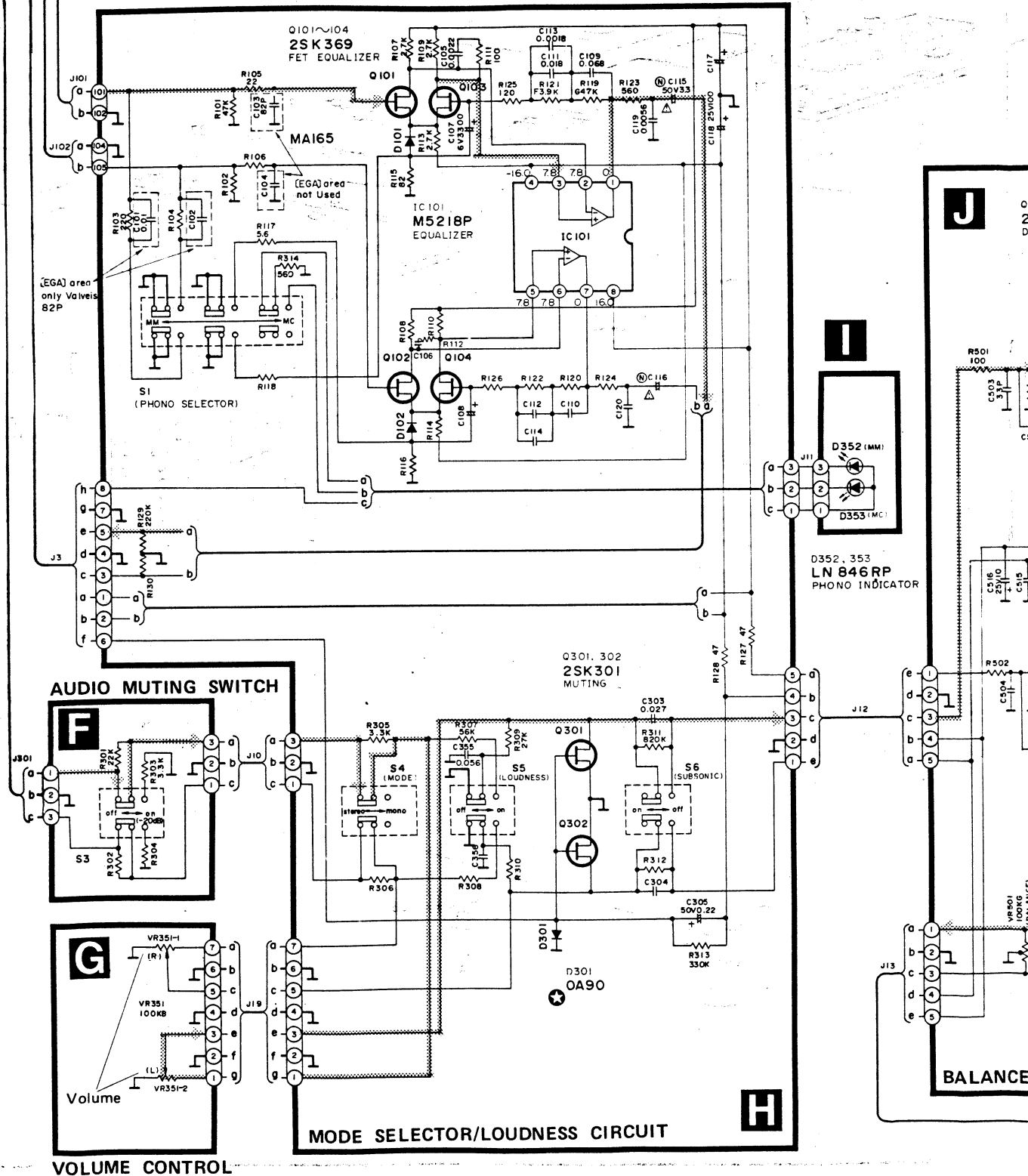


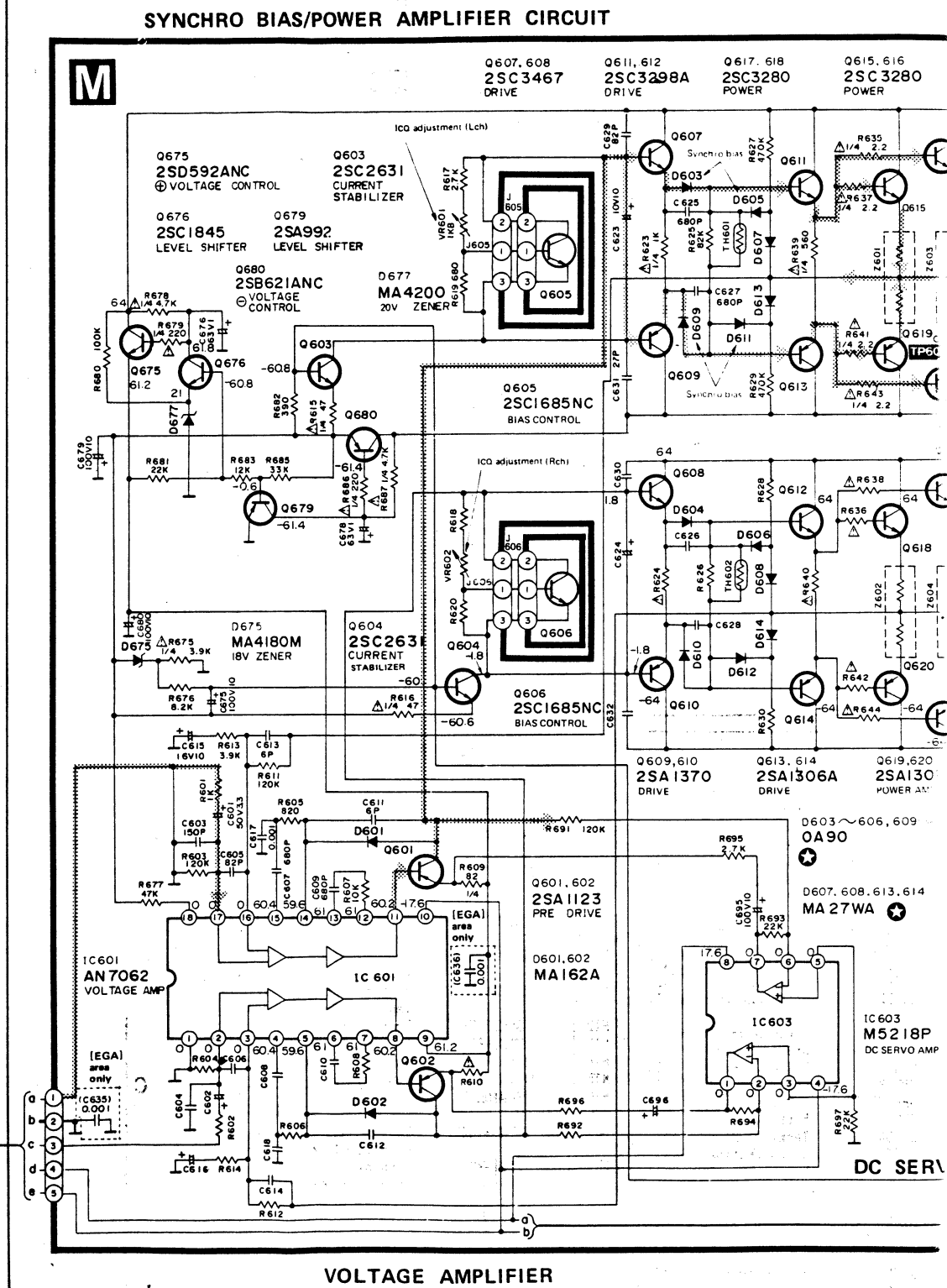
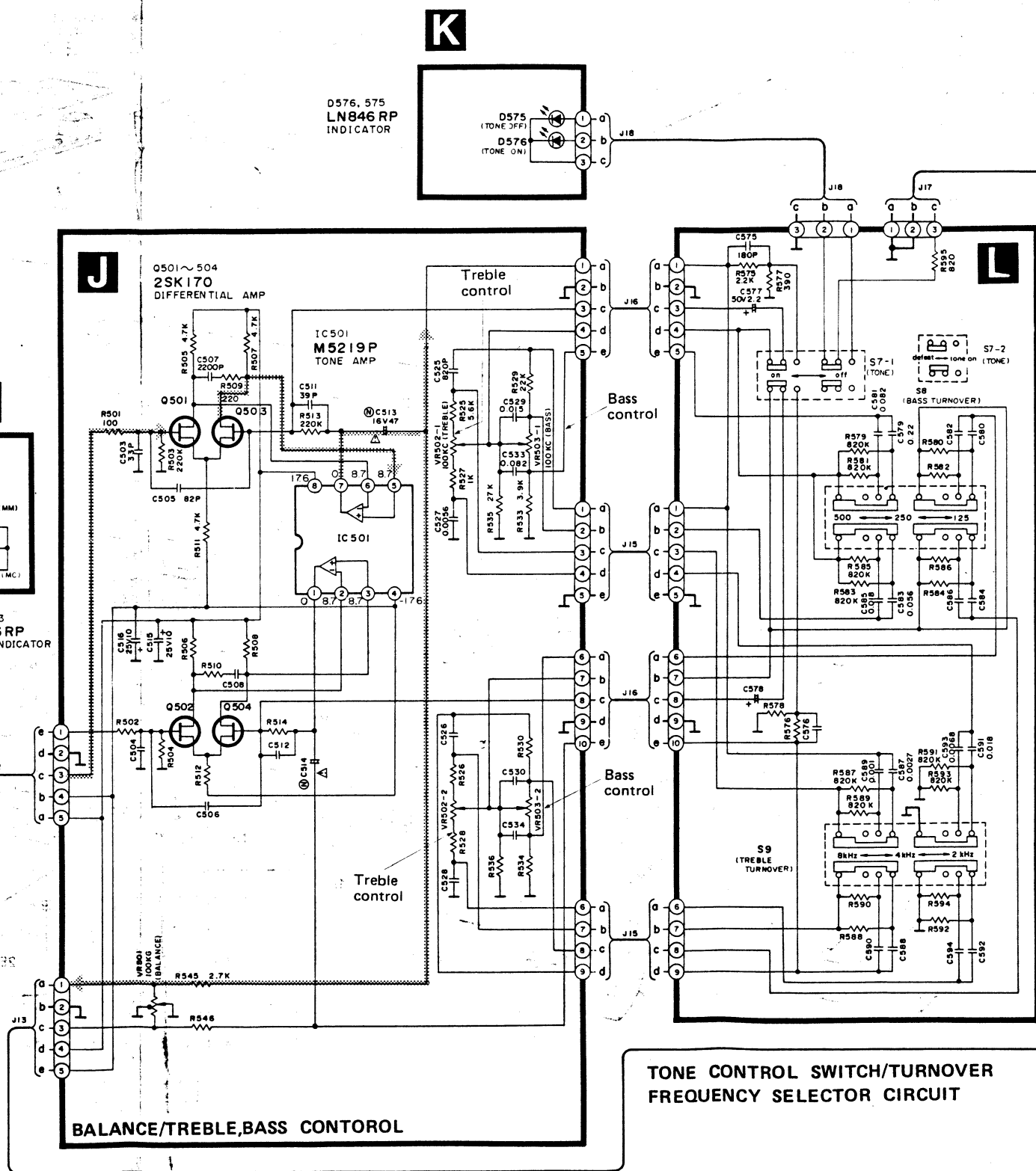
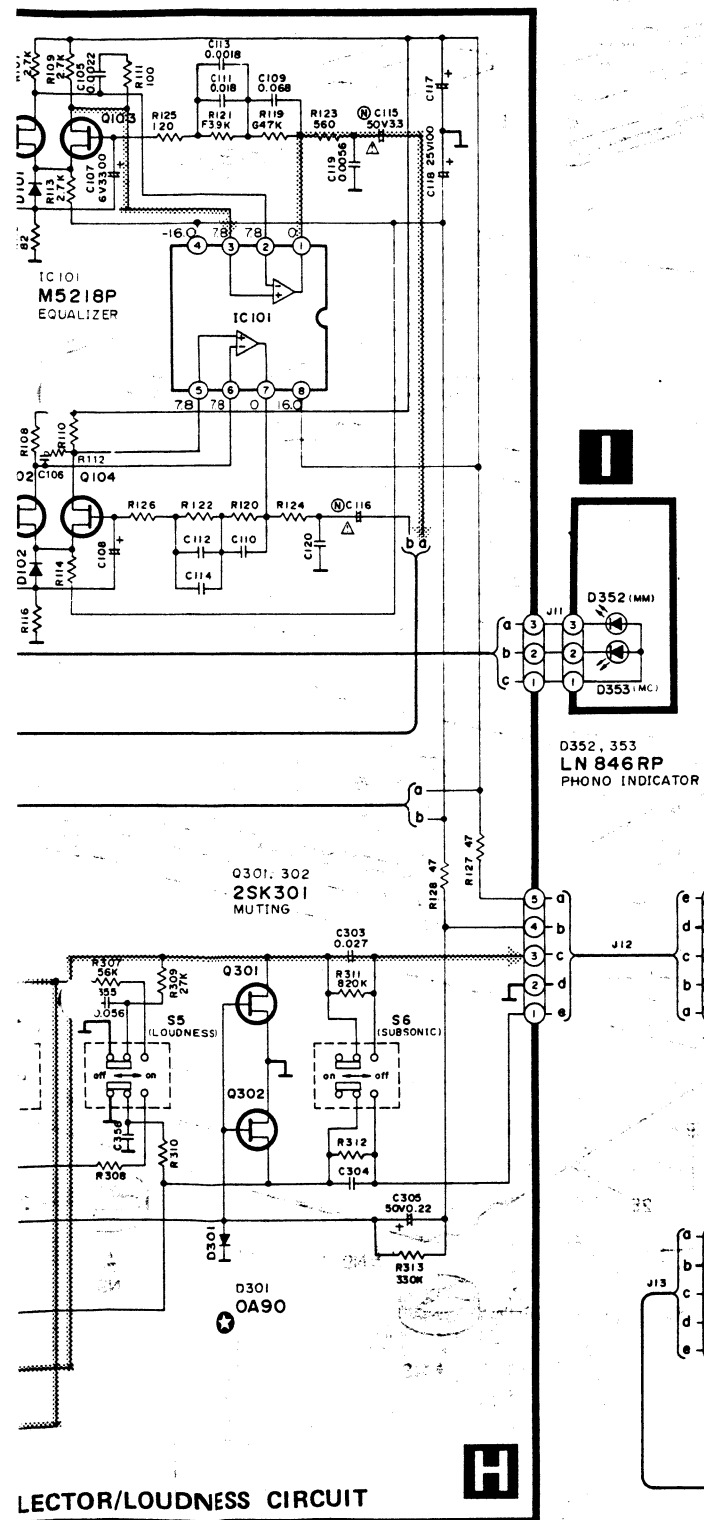
■ BLOCK DIAGRAM



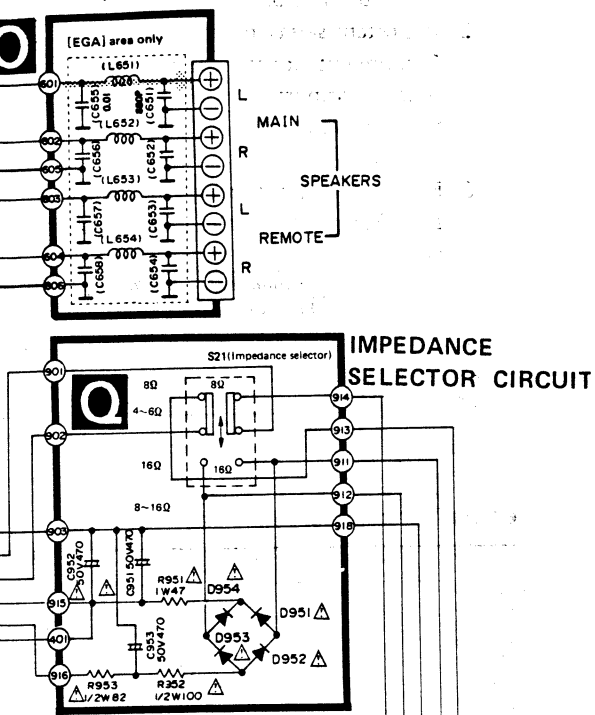








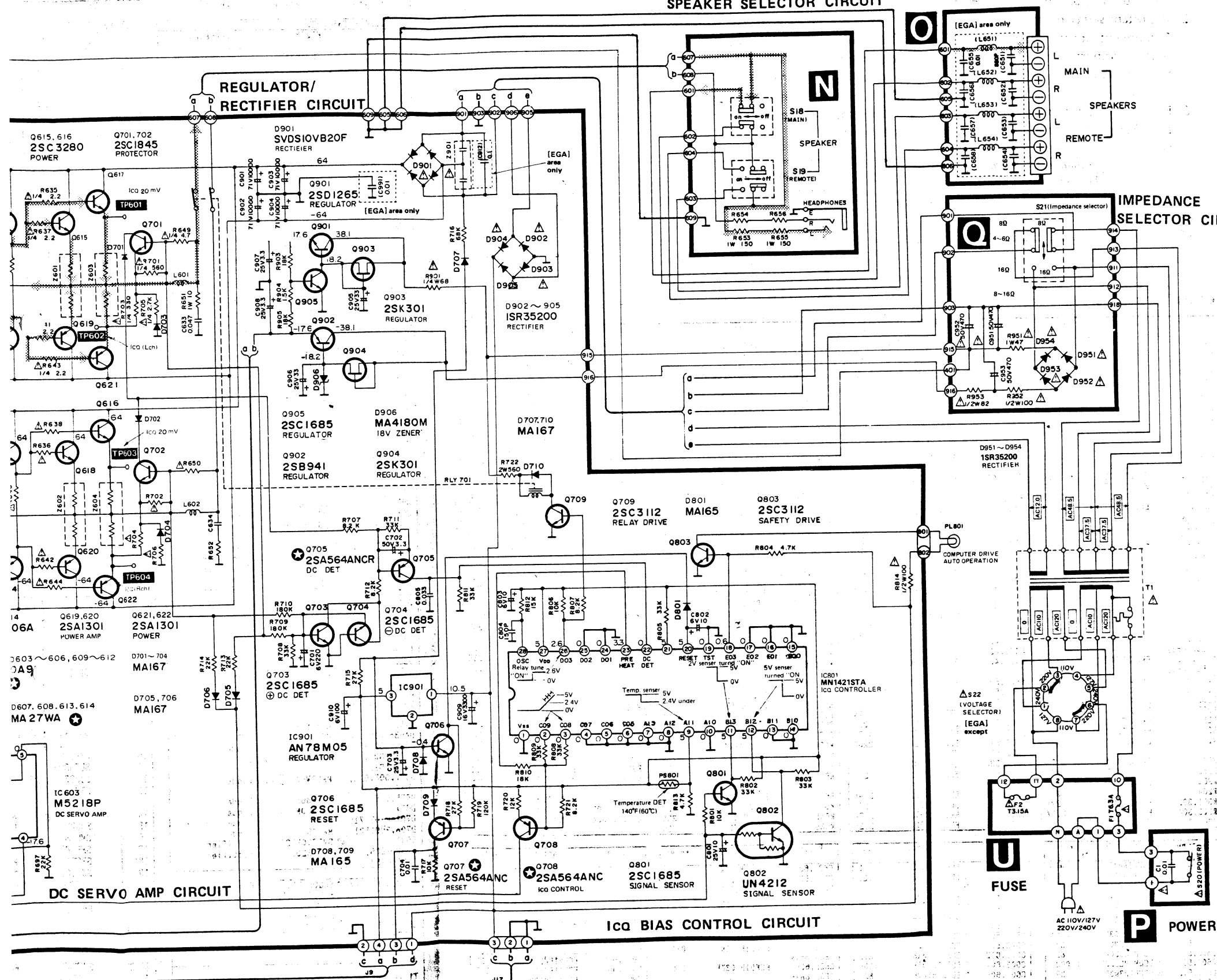
SPEAKER SELECTOR CIRCUIT

REGULATOR/
RECTIFIER CIRCUIT

SCHEMATIC DIAGRAM

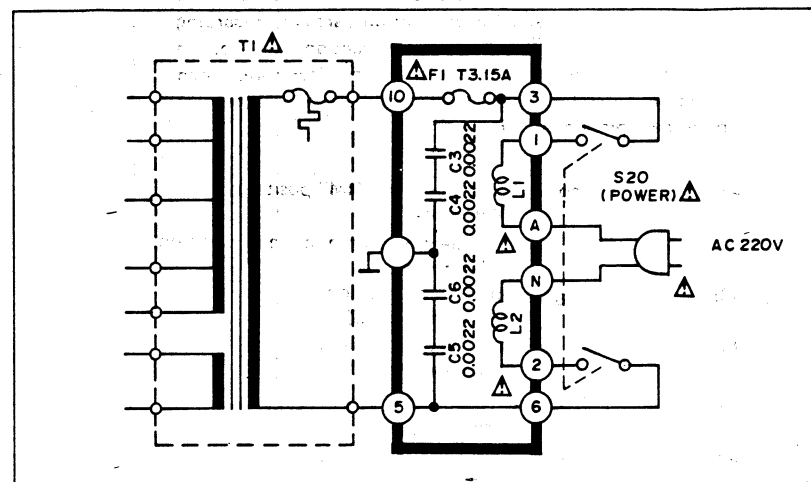
• The part No. of transistors, IC and diodes mentioned in the schematic diagram stand for production part No. Regarding the part No. with \star mark, the production part No. are different from the replacement part No. Therefore, when placing an order for replacement part, please use the part No. in the replacement parts list.

1. S1: Phono selection switch in "MM" position.
MM \rightarrow MC
2. S2: AUX 2 / Video selection switch in "rear" position.
front \rightarrow rear
3. S3: Muting switch in "off" position.
off \rightarrow on (-20dB)
4. S4: Mode switch in "stereo" position.
stereo \rightarrow mono
5. S5: Loudness switch in "off" position.
off \rightarrow on
6. S6: Subsonic switch in "off" position.
off \rightarrow -20Hz
7. S7-1, 7-2: Tone control switch in "on" position.
tone on \rightarrow defeat
8. S8: Bass turnover switch in "500Hz" position.
500Hz \rightarrow 250Hz \rightarrow 125Hz
9. S9: Treble turnover switch in "8kHz" position.
8kHz \rightarrow 4kHz \rightarrow 2kHz
10. S10-S17: Input selection switch
S10: Phono, S11: tuner, S12: CD,
S13: AUX 2 / Video, S14: AUX 1 / TV,
S15: TAPE 2 / VCR,
S16: TAPE 1 / DA TAPE, S17: REC mode
11. S18: Main speaker switch in "on" position.
on \rightarrow off
12. S19: Remote speaker switch in "off" position.
on \rightarrow off
13. S20: Power switch in "on" position.
14. S21: Impedance selection switch in "4 ~ 6Ω / 8Ω" position.
4 ~ 6Ω \rightarrow 8 ~ 16Ω
8Ω \rightarrow 16Ω
15. S22 (Except for [EGA]): Voltage selector switch "220V" position.
127 \rightarrow 110V \rightarrow 220V \rightarrow 240V
16. S23: TV/AUX 1 input filter switch in "on(TV)" position.
off \rightarrow on(TV)
17. Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
18. $\text{---} \text{---} \text{---}$ Phono signal (Lch)
19. $\text{---} \text{---} \text{---}$ Positive voltage lines or Negative voltage lines.
20. Important safety notice:
Components identified by Δ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

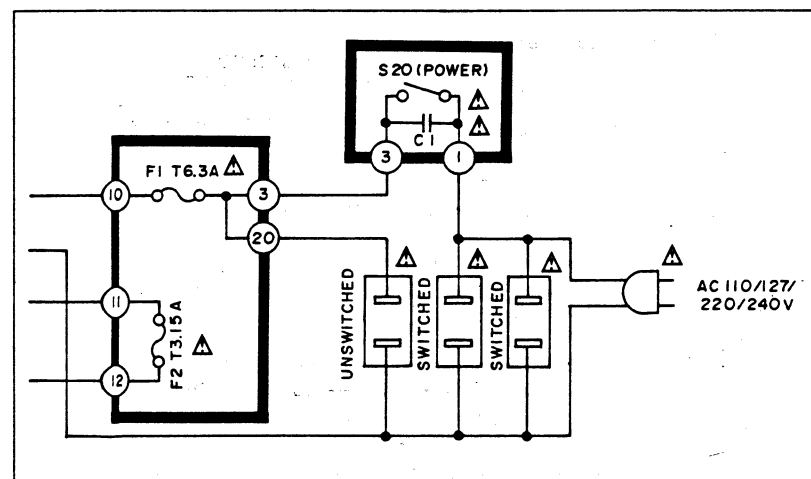


CIRCUITS TO BE CHANGED AND THE AREA

[EGA] area



[XA] area



| Ref.No. | Part No. | Value |
|--------------|--------------|--------|
| C1 | ECCKDC103PF2 | 0.01 |
| [EGA] except | | |
| C3.4 | ECCKDC222MF2 | 0.0022 |
| [EGA] only | | |
| C5.6 | ECCKDC222MF2 | 0.0022 |
| [EGA] only | | |
| C101,102 | ECCKD1H820K | 82P |
| [EGA] only | | |
| C101,102 | ECCKD1H103ZF | 0.01 |
| [other] | | |
| C103,104 | ECCKD1H820K | 82P |
| [EGA] except | | |
| C105,106 | ECQW1H222JZ | 0.0022 |
| C107,108 | ECQW1H332 | 3300 |
| C109,110 | ECQW1H683JZ | 0.068 |
| C111,112 | ECQW1H183JZ | 0.018 |
| C113,114 | ECQW1H182JZ | 0.0018 |
| C115,116 | ECQW1H333S | 3.3 |
| C117,118 | ECQW1H101 | 100 |
| C119,120 | ECQW1H562JZ | 0.0056 |
| C201 | ECCKD1H103ZF | 0.01 |
| C203,204 | ECCKD1H333ZF | 0.033 |
| C209,210 | ECCKD1H181K | 180P |
| [EGA] only | | |
| C211,212 | ECCKD1H181K | 180P |
| [EGA] only | | |

| Ref.No. | Part No. | Value |
|------------|--------------|--------|
| C213,214 | ECCKD1H181K | 180P |
| [EGA] only | | |
| C215,216 | ECCKD1H181K | 180P |
| [EGA] only | | |
| C217,218 | ECCKD1H181K | 180P |
| [EGA] only | | |
| C219,220 | ECCKD1H181K | 180P |
| [EGA] only | | |
| C221,222 | ECCKD1H181K | 180P |
| [EGA] only | | |
| C223,224 | ECCKD1H820K | 82P |
| [EGA] only | | |
| C251 | EECV2R3A3R3E | 3.3F |
| C253 | ECCKD1H102ND | 0.001 |
| C254 | ECCKD1H471K | 470P |
| C255 | ECCKD1H471K | 470P |
| C256 | ECQW1H100 | 10 |
| C303,304 | ECQW1H273JZ | 0.027 |
| C305 | ECQW1H222JZ | 0.0022 |
| C351,352 | ECQW1H121K | 120P |
| C353,354 | ECQW1H563JZ | 0.056 |
| C357 | ECQW1H100 | 10 |
| C401,402 | ECQW1H471K | 470 |
| C403 | ECQW1H471K | 470 |
| C404 | ECQW1H100 | 1000 |

REPLACEMENT PARTS LIST

- Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice: Components identified by Δ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
4. The "S" mark is service standard parts and may differ from production parts.
5. The unit of resistance is OHM (Ω).
K = 1000 Ω , M = 1000K Ω
6. The unit of capacitance is MICROFARAD (μ F).
P = 10⁻⁶ μ F
7. The parenthesized numbers in the column of description stand for the quantity per set.

| Resistor Type | Wattage | Tolerance |
|------------------|----------|--------------|
| ERD: Carbon | 10: 1/8W | J: \pm 5% |
| ERG: Metal Oxide | 25: 1/4W | G: \pm 2% |
| ERC: Solid | S2: 1/4W | K: \pm 10% |
| | S1: 1/2W | |
| | 12: 1/2W | |

| Capacitor Type | Voltage | | Tolerance |
|-----------------------------------|-----------|--------------|----------------|
| | ECEA Type | Other | |
| ECEA...N : Non-polar Electrolytic | 2R3: 2.3V | 05 : 50V DC | C : ± 0.25pF |
| ECEA : Electrolytic | DC | 1H : 50V DC | J : ± 5% |
| ECCD : Ceramic | OJ: 6.3V | 1 : 125V DC | K : ±10% |
| ECKD : Ceramic | 1C: 16V | 2H : 500V DC | Z : +80%, -20% |
| ECQM : Polyester | 1E: 25V | DKC: 125V AC | M : ±20% |
| ECQV : Polyester | 1V: 35V | | |
| ECQP : Polypropylene | 1H: 50V | | |
| EECW : Liquid electrolyte | 50: 50V | | |
| double layer capacitor | 25: 25V | | |
| ECKF : Ceramic | 2A: 100V | | |

RESISTORS AND CAPACITORS

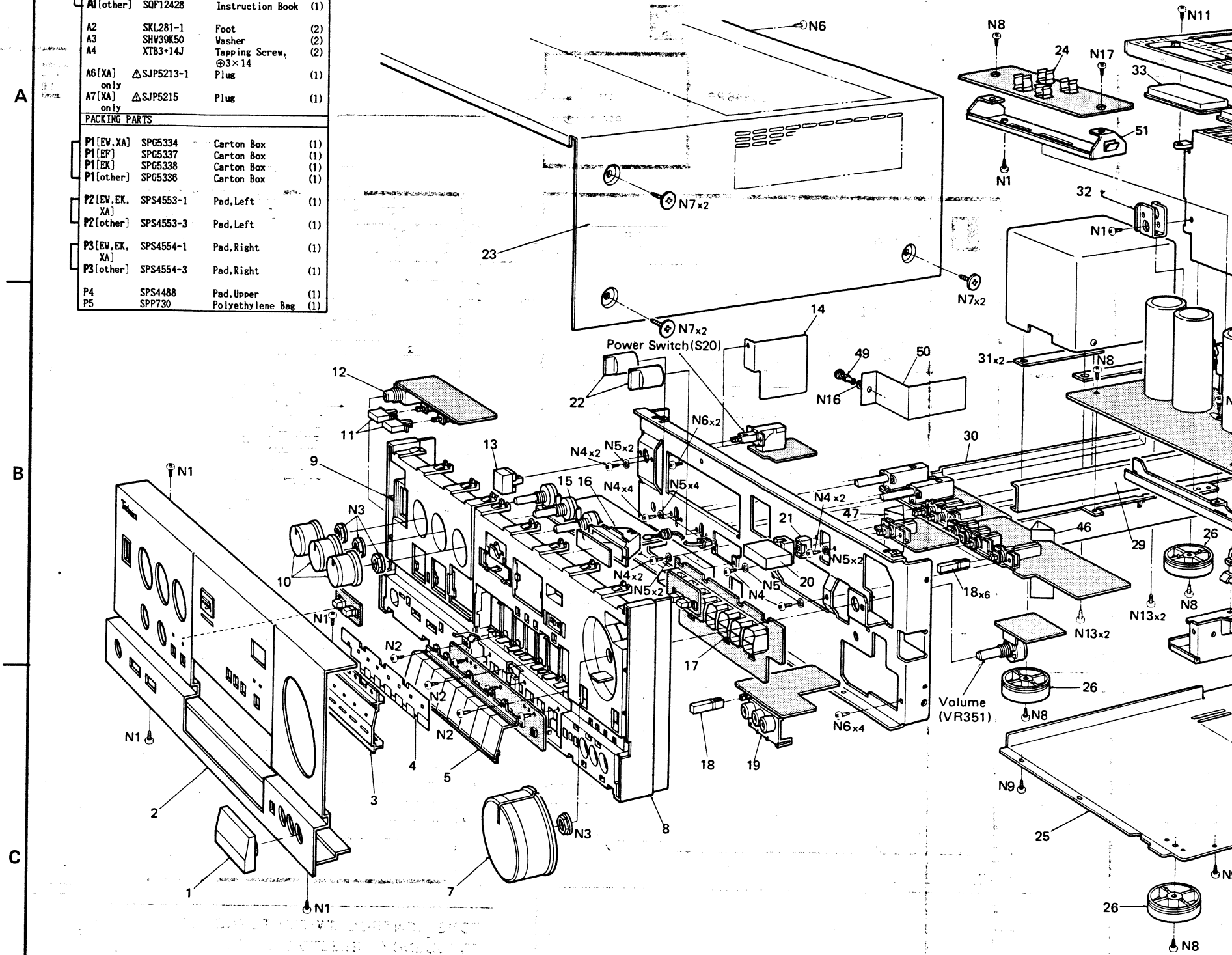
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|------------|--------------|--------|----------|--------------|--------|----------------|--------------|-------|----------------|--------------|-------|
| R101,102 | ERDS2TJ473 | 47K | R307,308 | ERDS2TJ563 | 56K | R577,578 | ERDS2TJ391 | 390 | R687 | ERDS2FJ472 | 4.7K |
| R103,104 | ERDS2TJ221 | 220 | R309,310 | ERDS2TJ273 | 27K | R579,580 | ERDS2TJ824 | 820K | R691,692 | ERDS2TJ124 | 120K |
| R105,106 | ERDS2TJ220 | 22 | R311,312 | ERDS2TJ824 | 820K | R581,582 | ERDS2TJ824 | 820K | R693,694 | ERDS2TJ223 | 22K |
| R107,108 | ERDS2TKG2701 | 2.7K | R313 | ERDS2TJ334 | 330K | R583,584 | ERDS2TJ824 | 820K | R695,696 | ERDS2TJ273 | 27K |
| R109,110 | ERDS2TKG2701 | 2.7K | R314 | ERDS2TJ561 | 560 | R585,586 | ERDS2TJ824 | 820K | R697 | ERDS2TJ223 | 22K |
| R111,112 | ERDS2TJ101 | 101 | R351 | ERDS2TJ477 | 4.7 | R587,588 | ERDS2TJ824 | 820K | R701,702 | ERDS2FJ561 | 560 |
| R113,114 | ERDS2TJ272 | 2.7K | R352 | ERDS2TJ471 | 470 | R589,590 | ERDS2TJ824 | 820K | R703,704 | ERDS2FJ331 | 330 |
| R115,116 | ERDS2TJ820 | 82 | R401,402 | ERDS2TJ820 | 82 | R591,592 | ERDS2TJ824 | 820K | R705,706 | ERDS2FJ272 | 2.7K |
| R117,118 | ERDS2TJ566 | 5.6 | R403 | ERDS2TJ820 | 82 | R593,594 | ERDS2TJ824 | 820K | R707 | ERDS2TJ822 | 8.2K |
| R119,120 | ERDS2TJ473 | 47K | R404 | ERDS2TJ104 | 100K | R595 | ERDS2TJ561 | 560 | R708 | ERDS2TJ333 | 33K |
| R121,122 | ERDS2TJ392 | 3.9K | R405 | ERDS2TJ820 | 82 | R601,602 | ERDS2TJ102 | 1K | R709,710 | ERDS2TJ184 | 180K |
| R123,124 | ERDS2TJ561 | 560 | R406,407 | ERDS2TJ104 | 100K | R603,604 | ERDS2TJ124 | 120K | R711 | ERDS2TJ333 | 33K |
| R125,126 | ERDS2TJ121 | 120 | R408,409 | ERDS2TJ104 | 100K | R605,606 | ERDS2TJ822 | 820 | R712 | ERDS2TJ822 | 8.2K |
| R127,128 | ERDS2TJ470 | 47 | R410 | ERDS2TJ104 | 100K | R607,608 | ERDS2TJ103 | 10K | R713,714 | ERDS2TJ223 | 22K |
| R129,130 | ERDS2TJ224 | 220K | R411 | ERDS2TJ391 | 390 | R609,610 | ERDS2FJ820 | 82 | R715 | ERDS2TJ273 | 27K |
| R203,204 | ERDS2TJ471 | 470 | R412 | ERDS2TJ271 | 270 | R611,612 | ERDS2TKG1203 | 120K | R716 | ERDS2TJ683 | 68K |
| [EGA] only | | | R413 | ERDS2TJ821 | 820 | R613,614 | ERDS2TJ392 | 3.9K | R717 | ERDS2TJ103 | 10K |
| R205,206 | ERDS2TJ471 | 470 | R414 | ERDS2TJ391 | 390 | R615,616 | ERDS2FJ470 | 47 | R718 | ERDS2TJ273 | 27K |
| [EGA] only | | | R415 | ERDS2TJ271 | 270 | R617,618 | ERDS2TJ272 | 2.7K | R719 | ERDS2TJ124 | 120K |
| R207,208 | ERDS2TJ471 | 470 | R416 | ERDS2TJ821 | 820 | R619,620 | ERDS2TJ681 | 680 | R720 | ERDS2TJ123 | 12K |
| [EGA] only | | | R417 | ERDS2TJ561 | 560 | R623,624 | ERDS2FJ102 | 1K | R721 | ERDS2TJ822 | 8.2K |
| R209,210 | ERDS2TJ471 | 470 | R418 | ERDS2TJ331 | 330 | R625,626 | ERDS2TJ823 | 82K | R722 | ERDS2TJ103 | 10K |
| [EGA] only | | | R419,420 | ERDS2TJ104 | 100K | R627,628 | ERDS2TJ474 | 470K | R802,803 | ERDS2TJ333 | 33K |
| R211,212 | ERDS2TJ471 | 470 | R421,422 | ERDS2TJ104 | 100K | R629,630 | ERDS2TJ474 | 470K | R804 | ERDS2TJ472 | 4.7K |
| [EGA] only | | | R423,424 | ERDS2TJ822 | 8.2K | R635,636 | ERDS2FJ272 | 2.2 | R805 | ERDS2TJ333 | 33K |
| R213,214 | ERDS2TJ471 | 470 | R425,426 | ERDS2FJ272 | 2.7K | R637,638 | ERDS2FJ272 | 2.2 | R806 | ERDS2TJ103 | 10K |
| [EGA] only | | | R428 | ERDS2TJ822 | 8.2K | R639,640 | ERDS2FJ561 | 560 | R807 | ERDS2TJ822 | 8.2K |
| R215,216 | ERDS2TJ471 | 470 | R429,430 | ERDS2TJ181 | 180 | R641,642 | ERDS2FJ272 | 2.2 | R808,809 | ERDS2TJ333 | 33K |
| [EGA] only | | | R431,432 | ERDS2TJ470 | 47 | R643,644 | ERDS2FJ272 | 2.2 | R810 | ERDS2TJ183 | 18K |
| R217,218 | ERDS2TJ471 | 470 | R433,434 | ERDS2TJ820 | 82 | R649,650 | ERDS2FJ477 | 4.7 | R811 | ERDS2TJ333 | 33K |
| [EGA] only | | | R501,502 | ERDS2TJ101 | 100 | R651,652 | ERDS2FJ100 | 10 | R812 | ERDS2TJ333 | 33K |
| R251,252 | ERDS2TJ104 | 100K | R503,504 | ERDS2TJ224 | 220K | R653,654 | ERDS2FJ151 | 150 | R813 | ERDS2TJ472 | 4.7K |
| R253,254 | ERDS2TJ104 | 100K | R505,506 | ERDS2TJ472 | 4.7K | R655,656 | ERDS2FJ151 | 150 | R814 | ERDS2TJ333 | 33K |
| R255,256 | ERDS2TJ101 | 100 | R507,508 | ERDS2TJ221 | 220 | R675 | ERDS2FJ392 | 3.9K | R901 | ERDS2FJ101 | 100 |
| R257 | ERDS2TJ101 | 100 | R509,510 | ERDS2TJ221 | 220 | R676 | ERDS2TJ822 | 8.2K | R903 | ERDS2TJ183 | 18K |
| R258 | ERDS2TJ221 | 220 | R511,512 | ERDS2TJ472 | 4.7K | R677 | ERDS2TJ473 | 47K | R904 | ERDS2TJ152 | 1.5K |
| R259 | ERDS2TJ472 | 4.7K | R513,514 | ERDS2TJ224 | 220K | R678 | ERDS2FJ472 | 4.7K | R905 | ERDS2TJ183 | 18K |
| R260 | ERDS2TJ473 | 47K | R525,526 | ERDS2TJ562 | 5.6K | R679 | ERDS2FJ221 | 220 | R951 | ERDS1FJ101 | 100 |
| R261 | ERDS2TJ472 | 4.7K | R527,528 | ERDS2TJ102 | 1K | R680 | ERDS2TJ104 | 100K | R952 | ERDS1FJ101 | 100 |
| R262 | ERDS2TJ824 | 820K | R529,530 | ERDS2TJ223 | 22K | R681 | ERDS2TJ223 | 22K | R953 | ERDS1FJ820 | 82 |
| R263 | ERDS2TJ101 | 100 | R533,534 | ERDS2TJ392 | 3.9K | R682 | ERDS2TJ391 | 390 | R1001,1002 | ERDS2TJ102 | 1K |
| R264 | ERDS2TJ221 | 200 | R535,536 | ERDS2TJ273 | 27K | R683 | ERDS2TJ123 | 12K | R1003,1004 | ERDS2TJ332 | 3.3K |
| R301,302 | ERDS2TJ223 | 22K | R545,546 | ERDS2TJ272 | 2.7K | R685 | ERDS2TJ333 | 33K | | | |
| R303,304 | ERDS2TJ332 | 3.3K | R575,576 | ERDS2TJ222 | 2.2K | R686 | ERDS2FJ477 | 4.7 | | | |
| R305,306 | ERDS2TJ332 | 3.3K | | | | | | | | | |
| C405 | ECEA1H471 | 470 | C578 | ECQW1H2R2 | 2.2 | C627,628 | ECCKD1H681K | 680P | C702 | ECEA1H3R3 | 3.3 |
| C406 | ECEA1H471 | 1000 | C579,580 | ECQW1H224JZ | 0.22 | C629,630 | ECCKD1H820K | 82P | C703 | ECEA1H3R3 | 3.3 |
| C407,408 | ECEA1H470 | 47 | C581,582 | ECQW1H223JZ | 0.082 | C631,632 | ECCKD1H270K | 27P | C704 | ECCKD1H103ZF | 0.01 |
| C409,410 | ECCKD1H390K | 39P | C583,584 | ECQW1H563JZ | 0.056 | C633,634 | ECQW1H473JZ | 0.047 | C801 | ECEA1H100 | 10 |
| C411 | ECCKD1H223ZF | 0.022 | C585,586 | ECQW1H183JZ | 0.018 | C635[EGA] only | ECCKD1H102ND | 0.01 | C802,803 | ECEA1H100 | 10 |
| C412 | ECCKD1H332ZF | 0.033 | C587,588 | ECQW1H272JZ | 0.0027 | C636[EGA] only | ECCKD1H102ND | 0.01 | C804 | ECCKD1H151K | 150P |
| C413,414 | ECEA1H470 | 47 | C589,590 | ECQW1H102JZ | 0.001 | C651,652 | ECCKD1H681K | 680P | C805 | ECCKD1H332ZF | 0.033 |
| C415 | ECCKD1H103ZF | 0.01 | C591,592 | ECQW1H183JZ | 0.018 | [EGA] only | | | C901,902 | ECCTT1R103Y | 10000 |
| C503,504 | ECCKD1H330K | 33P | C593,594 | ECQW1H822JZ | 0.0088 | C653,654 | ECCKD1H681K | 680P | C903,904 | ECCTT1R103Y | 10000 |
| C505,506 | ECCKD1H820K | 82P | C601,602 | ECEA1H3R3 | 3.3 | [EGA] only | | | C905,906 | ECEA1H3R3 | 3.3 |
| C507,508 | ECQW1H222JZ | 0.0022 | C603,604 | ECCKD1H151K | 150P | C655,656 | ECCKD1H103ZF | 0.01 | C907,908 | ECEA1H3R3 | 3.3 |
| C511,512 | ECCKD1H390K | 39P | C605,606 | ECCKD1H820K | 82P | [EGA] only | | | C909 | ECEA1H3R3 | 3300 |
| C513,514 | ECEA1H470S | 47 | C607,608 | ECCKD1H681K | 680P | C657,658 | ECCKD1H103ZF | 0.01 | C910 | ECEA1H471 | 100 |
| C515,516 | ECCKD1H103ZF | 0.001 | C609,610 | ECCKD1H681K | 680P | [EGA] only | | | C912[EGA] only | ECQW1H471 | 470 |
| C525,526 | ECQW1H153JZ | 0.015 | C611,612 | ECCKD1H060CC | 6P | C675 | ECEA1H3R3 | 3.3 | C953 | ECEA1H471 | 470 |
| C527,528 | ECQW1H562JZ | 0.0056 | C613,614 | ECCKD1H060CC | 6P | C676 | ECEA1H3R3 | 3.3 | C991 | ECCKD1H103ZF | 0.01 |
| C529,530 | ECQW1H153JZ | 0.015 | C615,616 | ECEA1H3R3 | 3.3 | C678 | ECEA1H3R3 | 3.3 | | | |
| C533,534 | ECQW1H823JZ | 0.082 | C617,618 | ECCKD1H102ND | 0.001 | C679,680 | ECEA1H3R3 | 3.3 | | | |
| C575,576 | ECCKD1H390K | 39 | C623,624 | ECEA2H100 | 10 | C695,696 | ECEA2H100 | 10 | | | |
| C577 | ECEA1H2R2 | 2.2 | C625,626 | ECCKD1H681K | 680P | C701 | ECEA2H221 | 220 | | | |

| Ref.No. | Part No. | Description |
|---------------------|-------------|--------------------|
| INTEGRATED CIRCUITS | | |
| IC101 | M5218P | Integrated Circuit |
| IC201 | TC9163N | Integrated Circuit |
| IC202 | TC9164N | Integrated Circuit |
| IC251 | UPD7506C043 | Integrated Circuit |
| IC252, 403 | MN4069UB | Integrated Circuit |
| IC253, 254 | DN74LS145 | Integrated Circuit |
| IC401, 402 | UPD4066BC | Integrated Circuit |
| IC501 | M5219P | Integrated Circuit |
| IC601 | AN7062 | Integrated Circuit |
| IC603 | M5218P | Integrated Circuit |
| IC801 | MN1421STA | Integrated Circuit |
| IC901 | AN78M05 | Integrated Circuit |

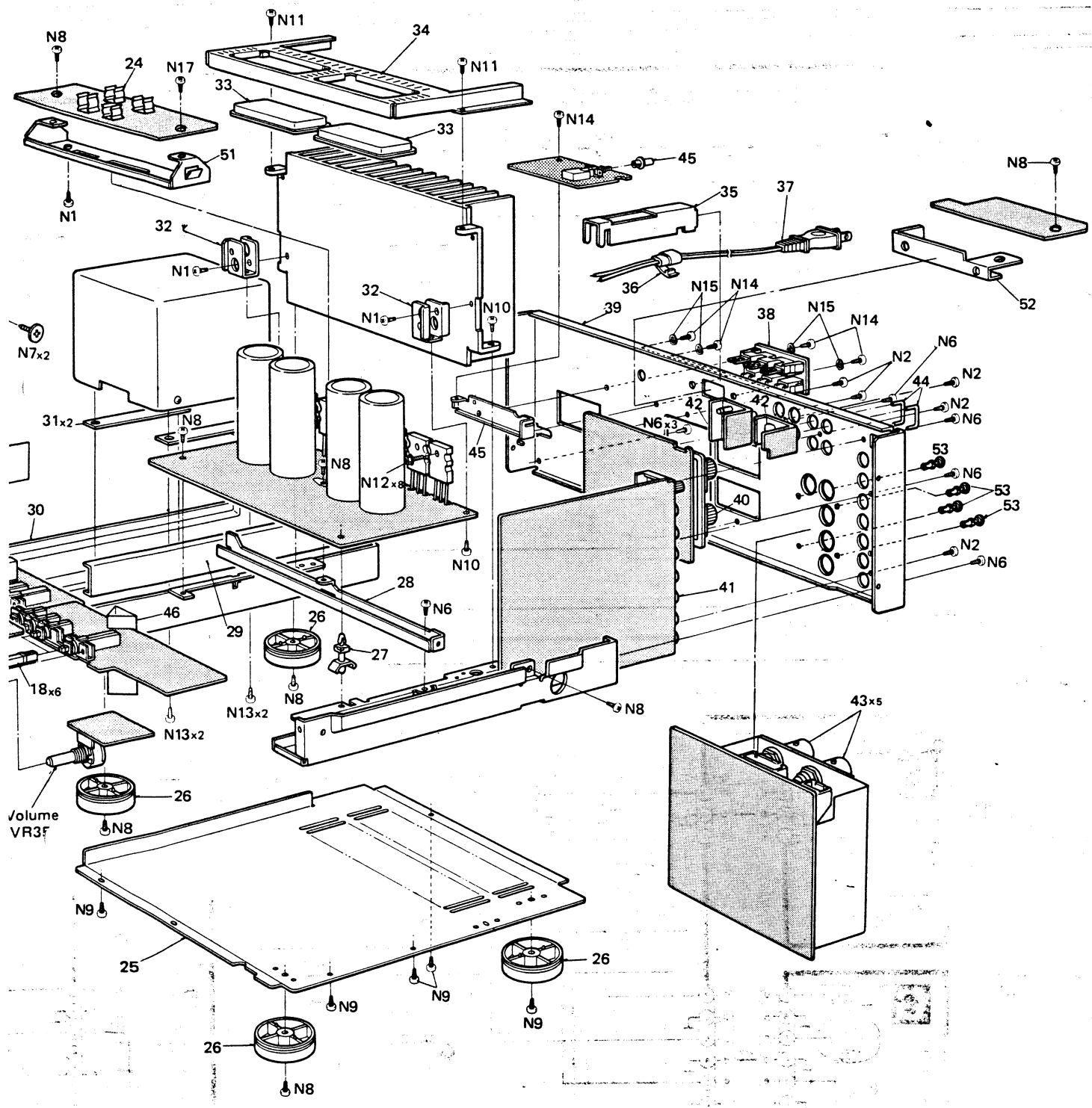
■ EXPLODED VIEW

| Ref.No. | Part No. | Description |
|---------------------------|----------------------|---|
| CRYSTAL | | |
| X251 | SVFCSB400P-M | Crystal |
| VARIABLE RESISTORS | | |
| VR351 | EWJKA054B15 | Volume, 100k Ω (B) |
| VR501 | EWHFKA002G15 | Balance, 100k Ω (G) |
| VR502, 503 | EVCKEA000C15 | Tone, 100k Ω (C) |
| VR601, 602 | EVNKGAA00B13 | ICQ Adj, 1k Ω (B) |
| COMPONENT COMBINATIONS | | |
| Z401 | EXBP85223K | 22k Ω |
| Z601~604 | ERF3GBKK22N | 0.22 Ω (\times 2) |
| Z901 | Δ SXRF5203ZSM | 0.01 μ F (\times 2) |
| [EGA] except | | |
| THERMISTERS | | |
| TH601, 602 | ERTD2ZHL103S | Thermistor, 10k Ω |
| RELAY | | |
| RLV701 | Δ SSV124 | Speaker |
| THERMAL DETECTOR | | |
| PS801 | SRPBG47101 | Posistor |
| LAMP | | |
| PL801 | XAMS12S500 | Safety Ind. |
| FUSE | | |
| F1 [EK] | Δ XBA2C63T80 | 250V, T 6.3A |
| F1 [EGA] | Δ XBA2C31TR0 | 250V, T 3.15A |
| F1 [other] | Δ XBA2C63TR0 | 250V, T 6.3A |
| F2 [EK] | Δ XBA2C31T80 | 250V, T 3.15A |
| F2 [EGA] | Δ XBA2C31TR0 | 250V, T 3.15A |
| except | | |
| SWITCHES | | |
| S1, 4~6 | SSH486 | Phono Selector, Mode, Loudness, Filter |
| S2 | SSH1183 | Aux2 |
| S3 | SSH1184 | Muting |
| S7 | SSH2090 | Tone Control |
| S8, 9 | SSR225 | Turnover |
| S10~17 | SSG13 | Frequency |
| S18, 19 | SSH2089 | Input Selector |
| S20 [EGA] | Δ ES890227S | Power Source |
| S20 [other] | Δ SSH1109 | Power Source |
| S21 | Δ SSH1158 | Impedance Selector |
| S22 [EGA] | Δ ESE37262 | Voltage selector |
| except | | |
| S23 | RSS42A | Filter |
| Ref.No. | Part No. | Description |
| CABINET and CHASSIS PARTS | | |
| 1 | SGE1729 | Terminal Cover (1) |
| 2 | SGWUV10X-KM | Front Panel Ass'y (1) |
| 3 | SGWUV10X-KM1 | Indication Plate (1) |
| 4 | SDU270 | Filter (1) |
| 5 | SBCUV10X-KM | Button, Input Selector (1) |
| 6 | SUS782 | Spring (1) |
| 7 | SBNI192 | Knob, Volume (1) |
| 8 | SGXUV10X-KN | Sub panel Ass'y (1) |
| 9 | SGXUV10X-KN1 | Sub panel Ass'y (1) |
| 10 | SBNI193 | Knob, Balance (3) |
| 11 | SBC439-2 | Button, Speaker (2) |
| 12 | SJJ63B | Headphone Jack (1) |
| 13 | SBC866 | Button, Power Source (1) |
| 14 | SMCUV10X-KM | Shield Cover (1) |
| 15 | SDU268 | Filter, Lamp (1) |
| 16 | SMP388 | Lamp Case (1) |
| 17 | SMP387-1 | LED Case (1) |
| 18 | SBC719-1 | Button (7) |
| 19 | SJF3061-2N | Terminal Board (1) |
| 20 | SBC708 | Button, Muting (1) |
| 21 | SHR9756 | Spacer (1) |
| 22 | SBNI194 | Knob (2) |
| 23 [EK] | SKCUV10X-KK | Cabinet (1) |
| 23 [other] | SKCUV10X-KM | Cabinet (1) |
| 24 [EGA] | SJT347 | Fuse Holder (2) |
| 24 [other] | SJT347 | Fuse Holder (4) |
| 25 | SKU8990-5 | Bottom Board (1) |
| Ref.No. | Part No. | Description |
| CABINET and CHASSIS PARTS | | |
| 26 | SK1295 | Foot (4) |
| 27 | SHR9755 | Holder (1) |
| 28 | SUWUV10X-KM | Bracket (1) |
| 29 | SUW2910-1 | Bracket (1) |
| 30 | SM1107-12 | Bracket, Power Transformer (1) |
| 31 | SHG6355 | Rubber, Power Transformer (2) |
| 32 | SUW2909 | Bracket (1) |
| 33 | SHG1635 | Rubber (2) |
| 34 | SMN1953 | Bracket (1) |
| 35 | SUW2915 | Bracket (1) |
| 36 [EK] | SHR129 | Bushing, AC Cord (1) |
| 36 [other] | SHR127 | Bushing, AC Cord (1) |
| 37 [EW, XA] | Δ SJA111 | AC Cord (1) |
| 37 [EK] | Δ QFC1205M | AC Cord (1) |
| 37 [XL] | Δ RJA79ZA | AC Cord (1) |
| 37 [other] | Δ SJA97 | AC Cord (1) |
| 38 [XA] | Δ SJS601-3 | AC Outlet (1) |
| only | | |
| 39 [D] | SGP6390-7A | Rear Panel (1) |
| 39 [EGA] | SGP6390-8A | Rear Panel (1) |
| 39 [XA] | SGP6390-9A | Rear Panel (1) |
| 39 [EK] | SGPUV10X-KK | Rear Panel (1) |
| 39 [other] | SGPUV10X-KF | Rear Panel (1) |
| 40 | SJF4817 | Terminal Board, Speaker (1) |
| 41 | SJF3059N | Terminal Board (1) |
| 42 | SJF3057N | Terminal Board (2) |
| 43 | SJS104 | Socket (5) |
| 44 | SJPG205-2 | Pin (2) |
| 45 | SBC165 | Button (1) |
| 46 | SHR9766 | Holder (1) |
| 47 | SHR9767 | Holder (1) |
| 48 | SUW2951 | Bracket (1) |
| 49 | SHR401-1 | Look Pin (1) |
| 50 | SMC1206 | Shield Plate (1) |
| 51 | SUW2828 | Bracket (1) |
| 52 | SUW2952 | Bracket (1) |
| 53 | SHR401-1 | Look Pin (4) |
| SCREWS, NUT and WASHERS | | |
| N1 | XTB3+8JFZ | Tapping, Φ 3 \times 8 (7) |
| N2 | XTB3+8GFZ | Tapping, Φ 3 \times 8 (6) |
| N3 | SNE4021 | Nut (4) |
| N4 | \odot XSN3+6BVS | Φ 3 \times 6 (12) |
| N5 | \odot XWA3BFZ | Washer, ϕ 3 (12) |
| N6 | XTBS3+8JFZ1 | Tapping with Detent, Φ 3 \times 8 (15) |
| N7 | SNE2095-5 | Cabinet (6) |

| Ref. No. | Part No. | Description |
|---------------------------|------------|-----------------------------|
| ACCESSORIES | | |
| A1 [XA] | SQF12429 | Instruction Book (1) |
| A1 [EGA] | SQF12430 | Instruction Book (1) |
| A1 [other] | SQF12428 | Instruction Book (1) |
| A2 | SKL281-1 | Foot (2) |
| A3 | SHW39K50 | Washer (2) |
| A4 | XTB3+14J | Tapping Screw, Ø3×14 (2) |
| A6 [XA] only | ΔSJP5213-1 | Plug (1) |
| A7 [XA] only | ΔSJP5215 | Plug (1) |
| PACKING PARTS | | |
| P1 [EV, XA] | SPG5334 | Carton Box (1) |
| P1 [EF] | SPG5337 | Carton Box (1) |
| P1 [EK] | SPG5338 | Carton Box (1) |
| P1 [other] | SPG5336 | Carton Box (1) |
| P2 [EV, EK, XA] | SPS4553-1 | Pad, Left (1) |
| P2 [other] | SPS4553-3 | Pad, Left (1) |
| P3 [EV, EK, XA] | SPS4554-1 | Pad, Right (1) |
| P3 [other] | SPS4554-3 | Pad, Right (1) |
| P4 | SPS4488 | Pad, Upper (1) |
| P5 | SPT730 | Polyethylene Bag (1) |



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| A | 23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 24 | | | | | | | | | | 32 | | | | | | | | | | 51 | | | | | | | | | | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 24 | 32 | 51 33 | 32 | 34 33 | 39 36 | 45 | 35 38 | 37 | 52 |
| 18 30 31 | 46 | 29 | 26 | 27 28 | 46 | 42 41 40 | 43 | 44 | 53 |
| 25 | 26 26 | | | | 26 | | | | |